

Guide

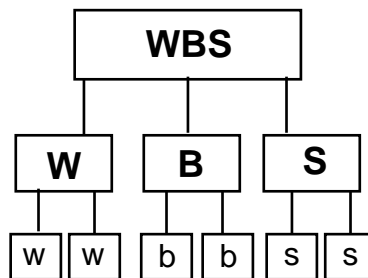
to

Caltrans

Capital Outlay Support

Work Breakdown Structure

Release 3.0
May 1996



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Ross Chittenden, Chief

Foreword

In June of 1994, the statewide standard Work Breakdown Structure (WBS) for Capital Outlay Support (COS) was established. A document named *Briefing Package on Capital Outlay Support Work Breakdown Structure (WBS) and Resource Breakdown Structure (RBS) 6/95* contained the Work Breakdown Structure to level 7 with definitions of tasks down through level 5.

In November, 1995, the WBS Task Force was re-established to develop definitions for tasks at level 6 and level 7 and make revisions as needed to the original structure. The product of this effort is the WBS version 3.0 and this guide, titled *the Guide to Capital Outlay Support Work Breakdown Structure*. This guide supersedes the WBS portion of the June 1995 *Briefing Package*.

This Guide provides the updated version 3.0 of the Caltrans Capital Outlay Support WBS and a new set of WBS definitions. This version of the WBS will be implemented as of July 1, 1996.

The task force wishes to thank all individuals within the districts and headquarters for their support and contribution to the production of this guide.

Guide to Caltrans WBS 3.0

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History and Background for the WBS

Recommendations from the Delta Team and other task forces circa 1988 included the implementation of a new project management process. Implementation of that Project Management Process began in July of 1989. Subsequently, two studies, Project Management Peer Review and the SRI Study, were conducted to assess the Department's progress in its implementation of the Project Management Process.

The consensus of these studies was that, while we had made some progress, we had not yet developed the systems needed to support project management. The studies said that three basic support structures were needed for effective project management:

- WBS Work Breakdown Structure
- RBS Resource Breakdown Structure
- OBS Organizational Breakdown Structure

A definition and description of the WBS follows in the next section.

The Resource Breakdown Structure is a hierarchical breakdown of total resources which defines assignable resources such as personnel, equipment, facilities, or consumable materials.

The Organizational Breakdown Structure is a hierarchical description of the Department's organizational chart which identifies the responsible person for a given resource as defined in the RBS.

These hierarchical systems for coding the work, the workers, and the organizational entity responsible for each, are needed in order to track and properly report the project work.

The PjD Coding Task Force was established in September, 1993 for the purpose of addressing two of these Project Management support structures, the RBS and WBS. The task force developed and recommended a standard RBS and WBS for all Capital Outlay projects to be implemented on July 1, 1994.

On April 4, 1995 level 7 of the COS WBS was set as the lowest level of statewide standardization.

A WBS Revision Committee was established in April, 1995 to finalize the structure and definitions of the standard Capital Outlay Support Work Breakdown Structure. The June 1995 *Briefing Package on Capital Outlay Support Work Breakdown Structure (WBS) and Resource Breakdown Structure (RBS)* outlined the structures and provided definitions for the WBS down to level 5.

The WBS Task Force was reconvened in November 1995 to revise and publish WBS activities definitions down to level 7. This guide is the result of that effort.

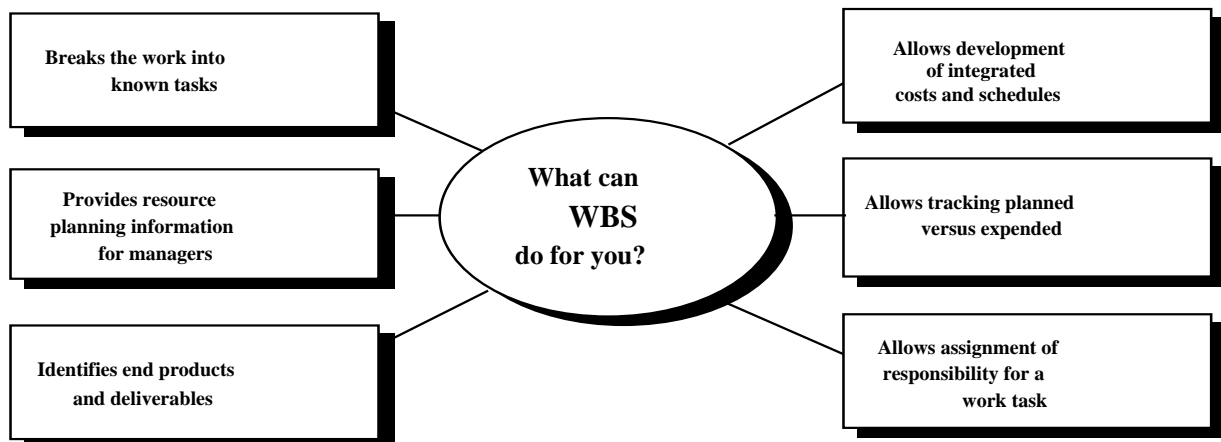
What is the WBS?

The Work Breakdown Structure (WBS) is a product-oriented hierarchy that organizes and defines the total scope of Caltrans Capital Outlay Support work. This structure defines the work activities, not the staff or other resources who will complete the work.

The Caltrans COS WBS is developed by identifying the highest level of work in the project. These major categories are then broken down into smaller (lower level) components that are often called work packages. Each descending (lower) level represents an increasingly detailed description of the project elements or work packages. The subdivision continues until the described activity is small enough to be adequately scheduled, resourced, monitored, and managed.

A standard WBS has many benefits including:

- Consistency of information needed to manage a statewide work force.
- More effective communication relative to project level work throughout the Department.
- Ease of data transfer, such as the sharing of project “templates” between and within districts.
- Decreased “culture shock” when employees transfer to different locations and work assignments.



Viewed from the top of the structure down, the work of Caltrans is divided into smaller and smaller work packages with each level. The end product of this breakdown, called “activity”, is described in enough detail to be assigned to an identifiable individual or an organizational or functional unit who is responsible for the satisfactory completion of that activity.

One level is completely described in further detail by the level below it. Each level is a summary of the work in levels below. For Caltrans management, for project manager, for

functional manager, or for staff, the complete scope of work can be viewed at an appropriate level of detail for the reviewer. The WBS facilitates summary reporting at a variety of levels.

In addition, the numbering scheme that goes along with the WBS allows staff to charge the time spent on roadway projects to the actual tasks they were performing. The same set of codes for tasks is used statewide for all roadway projects. Proper time charging allows managers to track how much projects actually cost Caltrans to produce. Over time, these proper charges for past projects allows more accurate forecasting of costs for new projects, as well as better predictions of what staff is needed when to produce a product.

Since proper time charging practice is the responsibility of all Caltrans staff, understanding of the WBS is important to all staff. More information on proper time charging practices with examples is given on page 19.

Although an attempt was made to place the activities generally in the order in which they may occur, the numeric order of the coding is not necessarily the chronological order. There may be an overlap of time between the start dates of activities. Each project manager may vary the order in which a project is developed. A project manager or, in some cases a functional manager, may schedule activity xxx.10 to be completed before activity xxx.05.

The WBS, the coding structure, and the definitions of each activity are not meant to be a blueprint for doing a project. The actual process, governing policies, and procedures are defined in other Caltrans manuals. Those manuals, memos, and guidelines should be consulted for questions about how to do or manage a project.

For your convenience, the appendices contain a list of Level 5 tasks with Level 4 code in numeric order by Level 4 and one sorted by Level 5.

Levels of the WBS

In order to facilitate summary reporting of work done for Caltrans, the WBS contains several levels of breakdown of the work, starting with Level Ø. Each succeeding level breaks down our work into component parts. Each level represents a summary of the work below it and can be the basis for reporting that gets as detailed as needed.

A graphic representation of the WBS Levels Ø through 5 is shown on the page 7 and may be helpful to summarize the following Levels discussion.

Level Ø - the Caltrans Level

This top most level of the WBS represents all the work that Caltrans is charged to do by the Legislature.

Level 1 - the District Level

This level represents all scheduled work performed by a specific charge district. There are twelve districts and therefore twelve components to this level, each component represented by the two-digit charge district number. The “charge district” is the organizational entity that manages the work and receives the benefit of the work.

Level 2 - the Program Level

Level 2 is used to separate the work by major program. Currently, the WBS is only developed for COS (that is, transportation/highway projects). It is anticipated that there will be additional WBS development for Caltrans’ other programs: Aeronautics, Mass Transit, and Transportation Planning. This level is not represented separately in time reporting.

Level 3 - the Project Level

This level represents the work scheduled for an individual COS project. COS projects are identified currently by a six-digit field called EA, or expenditure authorization; however, this coding may be changed in the near future to be a project identifier that represents the whole project, not just a source of funding. At the present time, this level is commonly called the “EA level” and the EA is used in time reporting. In some computer systems, the sixth digit is represented by an underbar character for multi-phase projects.

Level 4 - the Summary Task Level

Level 4 breaks a COS project into a maximum of ten summary tasks. Some projects may not need all ten tasks, however, no COS project will use more than these. While similar to the concept of “phases” of projects, these ten major tasks do not equate to the phases of a project. This level is not used in time reporting.

Level 5 - the Major Task Level

This level is a breakout of the summary tasks and represents the minimum level of detail required to plan, schedule, and manage COS projects. The code structure for this level is a three digit number. The Level 5 code number must be shown in the

Time Reporting System (TRS) in the “Agency Object” field for any work done on a COS project.

Level 6 and 7 - the Task and Activity Levels

Level 6 and 7 contain tasks and activities when the Level 5 Major Tasks do not contain sufficient detail to plan, schedule and manage the work. Some Level 6 activities do not need a further breakdown to Level 7 at this time, so not all Level 6 activities have a Level 7.

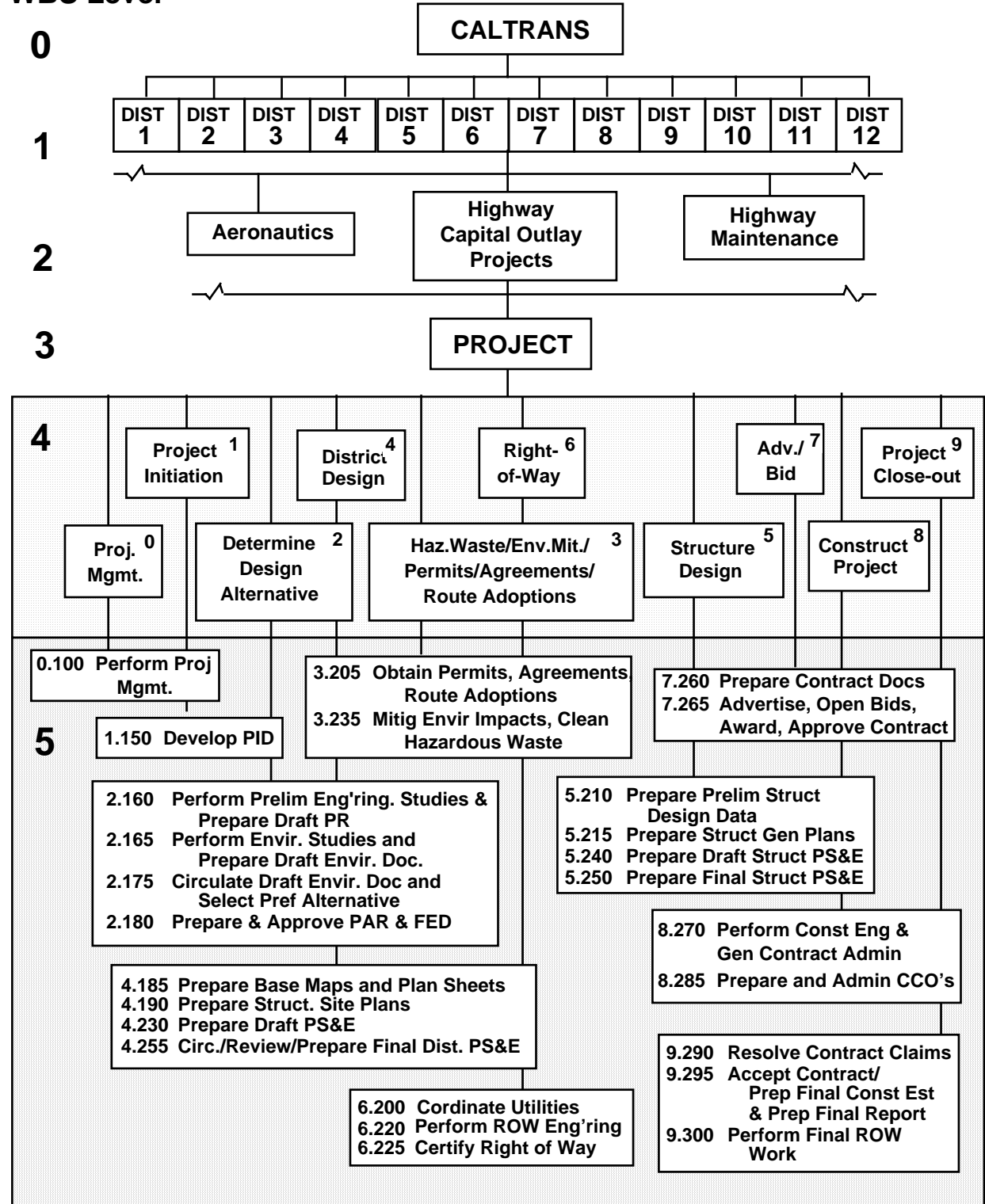
The identifiers for Level 6 and 7 are 2-digit numeric codes. The identifiers for Level 6 and 7 are entered into the MSA field of the TRS with a leading prefix character and without any delimiter between Level 6 and 7. See page 19 for an example.

The WBS Task Force determined that Caltrans staff need go no lower than Level 7 activities as far as statewide reporting is concerned as of this time. There is no standardization lower than Level 7 at this time. However, further breakout may be used if needed and may be standardized at some future date.

A complete listing of WBS Activities Levels 5, 6 and 7 is provided in the Appendix D.

Work Breakdown Structure Diagram

WBS Level

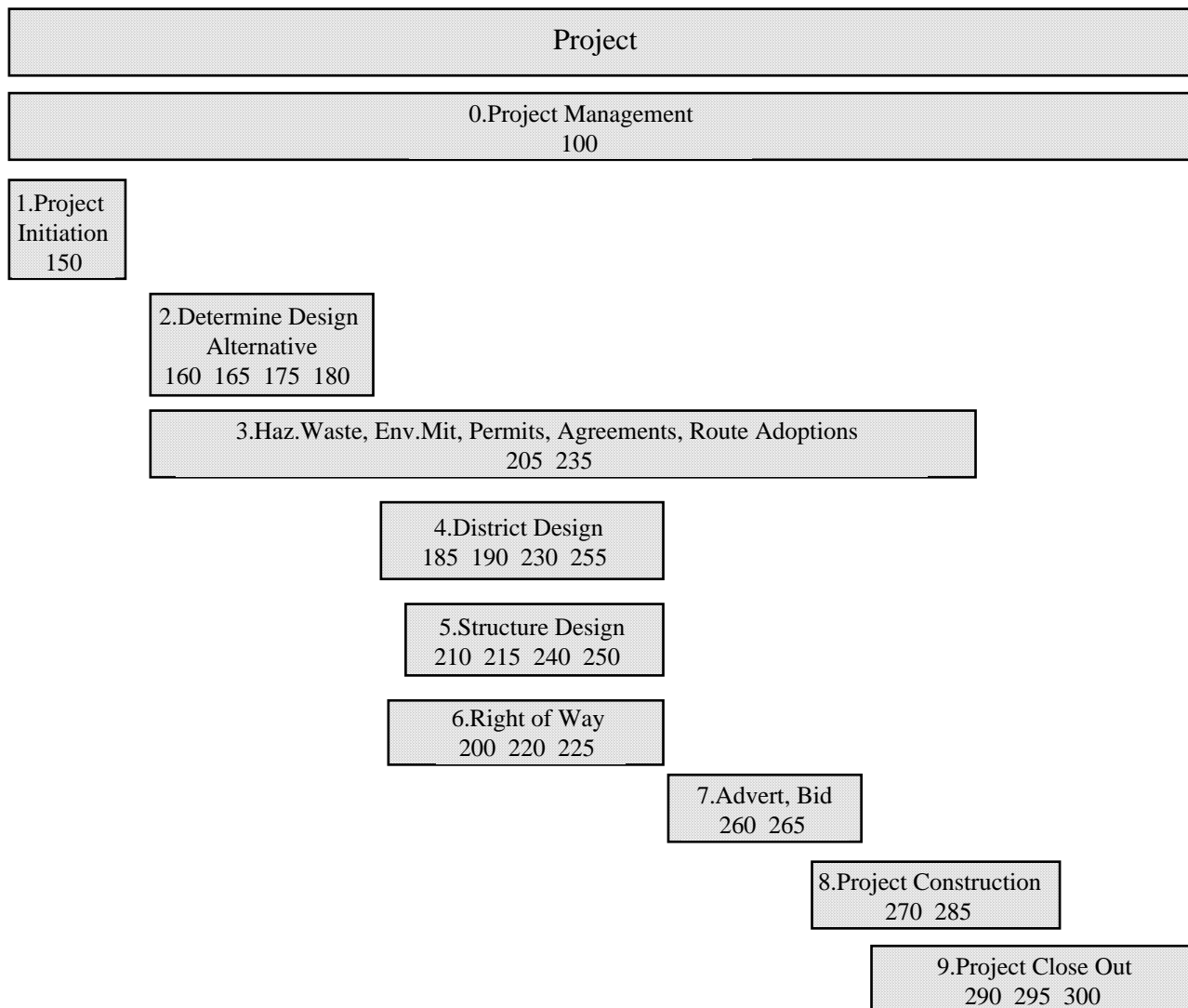


Level 3, 4, and 5 of a Project as a Gantt Chart

Level 3 of the WBS is the Project itself.

Level 4 is represented by the numbers with title.

Level 5 is represented by the numbers under the Level 4 title.



Rules for Usage of the WBS

Each Level is a Complete Summary of Work Below

As work is broken into increasing levels of detail, each level must completely include the total work scope of the WBS element at the next higher level. For instance, the sum of the Level 7 activities represents the total work needed to accomplish the superior Level 6 task.

A project manager may elect to schedule and monitor portions of a project to a level lower than 5; however, if any of the work of a Level 5 task is scheduled to Level 6, all the work done in that Level 5 task must be scheduled to Level 6. Each Level 5 task must be a complete summary of the Level 6 tasks that will be done on that project. The same is true for scheduling below Level 6.

If this breakdown is not followed, then the summary rollup features provided by this hierarchical system will not work and actual effort spent might be under-reported or over-reported.

Pseudo Activities

In order to provide increased scheduling flexibility, two “pseudo” activities are or can be used in the WBS. Both have the same meaning as far as work activities, however, the .95 is standardized in the WBS, and the use of the .99 is up to the Project Manager for an individual project.

- .95 - “Other” will appear as a listed activity in the standard WBS. It’s usage is limited to those conditions in which the specific listed activities do not include the total work scope of the next higher level WBS element.
 For example, under WBS level 6 - “205.10 - Obtain Permits”, are listed several specific permits that are common throughout the state. The activity “205.10.95 - Obtain ‘Other’ Permits” provides for the many other permits that do not have statewide applicability.
 Location and description of “.95 - Other” activities within the standard WBS require statewide approval and implementation.
- .99 - “All other” has been provided as a “wildcard” activity for use in those conditions in which the Project Manager needs to schedule and track some, but not all, of the standard WBS activities at a given level.
 For example, under WBS level 6 - “185.20 - Prepare Engineering Reports”, the Project Manager might decide he or she only needs to track activity “185.20.15 - Prepare Geotechnical Design Report”. “All other” engineering reports would be scheduled under a wildcard activity “185.20.99 - Prepare “All other” Engineering Reports. This wildcard activity would have to be added.

Time Reporting and WBS

The Project Manager will determine the minimum level of detail (highest in the WBS) to which each portion of a project will be scheduled beyond the mandatory

Level 5. A functional manager may elect to schedule activities for their portion of the work at a more detailed (lower) level. A single project workplan can consist of Level 5, Level 6, and Level 7 activities, as needed for proper managing of the work.

Managers should take care to ensure that staff working on each part of a project understand which level is desired so that time reporting can be consistent with the desired level. See page 19 for an example of proper time coding.

For example, if a portion of the work is scheduled only to the WBS Level 5, the time reporting entries must be at least to Level 5.

If scheduled work is to Level 7, time charges must be to Level 7.

Conversely however, if the project schedule is at level 5, time charges may be entered at a lower level (e.g., level 7). This lower level of reporting than is needed will just “roll up” to the specified higher level in systems that use TRS.

Levels Beyond Level 7

Level 8 or Level 9 activities may be added without statewide approval. However, for accuracy, it is suggested that a district or region try to standardize any lower level activities. It should be noted that some Level 6 activities in the standard WBS do not have lower Level 7 activities. In such cases, Level 7 tasks or lower may be added without statewide approval.

Consultant Oversight Versus Caltrans Staff Work

When an individual is performing oversight of a project activity being done by a consultant hired by the Department, the prefix “O” should be used in the first column of the MSA field on time sheets. Otherwise, the prefix “P” should be used, followed by the appropriate Level 6 and 7 activity .

NOTE: Personnel performing oversight of “Work for Others” should use activity 098 and not a WBS Activity.

WBS Change Control Process

Just as every thing in life, changes are inevitable and the WBS will need upgrading in the future to meet the changing business environment in which we operate. This guide contains the WBS Change Process which the WBS Task Force has established for any future revision or modifications of the standard WBS activities.

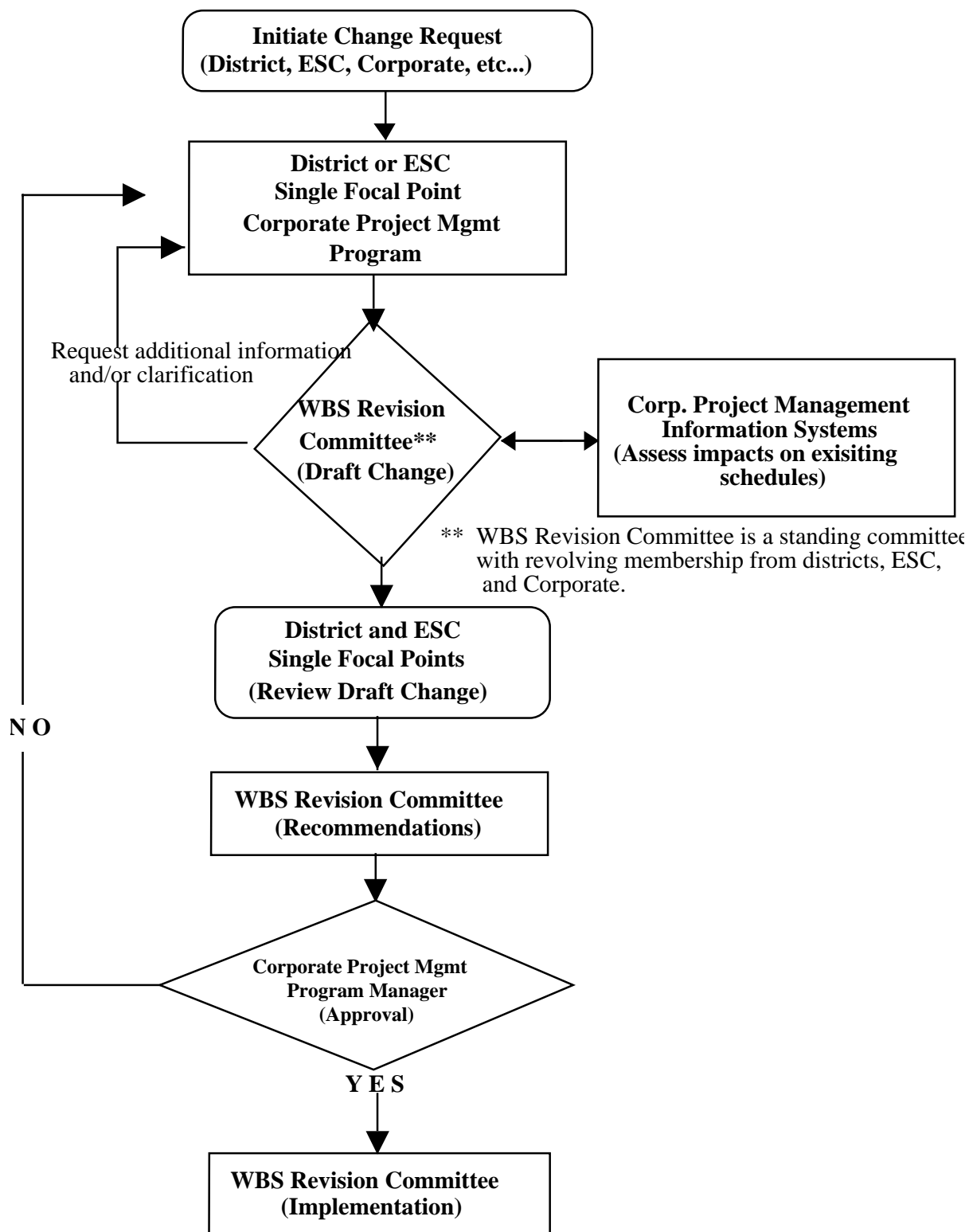
This process is implemented as the date of this publication. The process is as follows:

- A. Anyone from the districts, Engineering Service Center (ESC), or Headquarters programs, may prepare a Change Request form to propose a change to the activities or definitions of activities in the WBS. (A WBS Change Request form will be designed for this purpose.) A completed form outlining the proposed change should be sent to the requester's Single Focal Point (SFP). For staff at Headquarters programs, the requester shall forward the form to the Statewide Project Management Program Manager (PMP Manager).
- B. The District, ESC, or HQ SFP will review the request form. The review and approval process in districts and ESC and corporate program shall be defined by those units. Change Requests that are deemed worthy of further consideration will be forwarded to the WBS Revision Committee with a recommendation. The WBS Revision Committee is a standing committee with revolving membership from districts, the ESC and headquarters units.
- C. The WBS Revision Committee evaluates the request to:
 1. determine if the change fits within the WBS concepts,
 2. request assessment of impacts of the proposed changes on the existing project schedules from the Project Management Program, Office of Project Management Information Systems,
 3. determine if additional information and/or clarification is needed, and
 4. make a preliminary decision on the request with a written explanation.The Committee will create a recommendation based on the change request.
- D. The Committee will circulate the change request with recommendation to all SFP's in districts, ESC, and HQ programs for review and comments. The review period is determined by the Committee.
- E. After receipt of timely comments, the Committee will review the comments and make a recommendation on the change request.
 - If the Committee recommends that the change request go forward, it will prepare a draft WBS change proposal and transmit it to the PMP Manager for approval.
 - If the Committee recommends disapproval, it will forward the change request with its recommendation to the PMP Manager for decision.

- F. The PMP Manager will review the proposal and has the ultimate authority on its disposition. The PMP Manager will confer with the WBS Revision Committee on final disposition of the request or proposal.
- If dis-approved, the change proposal will be returned with comment on the reason to the WBS Revision Committee for distribution.
 - If approved, the change proposal will be returned to the WBS Revision Committee for action.
 - If the PMP Manager concurs with the Committee's disapproval of a change request, the change request with explanation will be returned to the originating SFP.
- G. The WBS Revision Committee receives the approved change proposal and prepares a plan of action including timetable for implementation of the proposal, how the change is communicated, what training or re-training might be involved, and what manuals have to be revised.
- H. The WBS Revision Committee communicates the WBS change statewide.

The following flow chart provides a graphical presentation of the Change Process.

WBS Change Control Process Diagram



Format for the WBS Definitions Pages

The set of WBS definitions beginning on page 23 of this Guide is provided to clarify the WBS activities so that these activities can be properly resourced, scheduled, and monitored and staff can properly charge their time to them.

For Level 5 tasks, a paragraph is given to describe what work the task summarizes.

For Level 6 activities where there is no standardized Level 7 below, a bullet list of sub-tasks may be given to further clarify what is intended by the activity. This bullet list may be used to develop Level 7 activities where a manager wishes to collect information at a more detailed level than the current WBS standard.

For Level 6 tasks where a further breakout into standardized Level 7 activities is needed, the paragraph description is supplemented by a numbered list of the standard Level 7 activities. Where there is such a numbered list, these activities are a part of the standard WBS. If a manager chooses to manage this area of a project to Level 7, these numbered activities must be used if that work is done at all on the project.

For Level 6 tasks or activities, one or more end products which result from the completed activity is/are listed.

For Level 7 tasks: Level 7 of the Caltrans Capital Outlay Support Work Breakdown Structure is the lowest standardized level. At this level, some work packages are fairly small and self-definable, such as Activity 160.05.05 “Review Approved PID”. So there is little need for further definition.

Others at Level 7 are still relatively large work packages encompassing many sub-tasks of work, or they encompass lesser known activities that require additional information than their title alone provides.

For example, activity 185.15.05 “Perform Roadway and Misc. Design” or “activity 235.05.15 “Perform Biological Mitigation” both need some further definition even at Level 7.

When Level 7 activities are shown, there may be a further summary description of the work involved in this activity. In some cases, the Level 7 activity encompassed a large enough work package that a bulleted list of sub-tasks and a defined end product was necessary for clarity. If the Level 7 activity is clear by the title alone, no further description is given.

Beyond Level 7: When a manager wishes to manage an area of a project at a level more detailed than Level 7, and a bullet list of sub-tasks is given, the bullet list may be used to develop Level 8 activities.

The Definitions are Not a Blueprint for Doing the Work

It should be noted that these definitions are only meant to show what work is included in each work package. The project development process and its governing policies and procedures are defined elsewhere in various Caltrans manuals, memos, policy directives, etc. Proper completion of the work package must follow those guidelines.

These definitions are not all inclusive of every activity that must be accomplished. Rather they provide a framework for categorizing the work for proper time reporting and scheduling. Thus the phrases, “All work involved in...” or “Includes...” were used instead of an exhaustive list of sub-tasks.

How to Determine Where Your Work Fits

A decision on what activity to use should not be based on “who” is performing the activity but rather “what” product or work package results from the activity. Staff from more than one functional area may be assigned to and may charge against any activity. Coding for reports on who is working or who is assigned to an activity is handled by the Resource Breakdown Structure (RBS).

The WBS is a product-driven system, not a resource-driven system. This is a change from the old set of activity codes which were “functionally oriented” and did not involve work packages or products.

For example, Level 5 Summary Task 100 “Perform Project Management” is designed so that anyone performing a project management task in that series would use those codes. Staff charging to activities in the Task 100 series could include not only the Project Manager, but a functional manager, functional staff, Project Control staff, and the Program Manager.

For another example, an engineer in Design and an environmental planner involved in the environmental scoping process could both use activity 165.05 “Perform Environmental Scoping and Select Alternatives for Study”.

Although an attempt was made to place the WBS activities generally in the order in which they may occur on a project, the numeric order of the coding is not necessarily the chronological order. There may be an overlap of time between the start dates of activities. Each project manager may vary the order in which a project is developed, thus moving activities out of numeric sequence. A project manager or, in some cases a functional manager, may schedule activity xxx.10 to be completed before activity xxx.05.

In order to properly charge your time to a Capital Outlay Support project, you must confer with the functional or project manager to determine the level of reporting they have chosen for your work on the project. You must report your time to the correct activity and the correct level of the WBS in order to support Caltrans’ effective management of the project.

This guide and the definitions of tasks and activities is designed to help you find the correct activity code to schedule and/or charge to your capital outlay project. If your specific activity is not obvious from the titles, then:

1. Review the Level 4 Summary Tasks for the nearest one or two tasks.
2. Review the Level 5 Major Tasks for that one or two tasks.
3. Then ask yourself what end product results from your work. What activity does your work support? Review the end products in the few major tasks you have identified until you find the correct one.
4. Review the worded descriptions of the tasks or activities that you have narrowed down to locate the proper one.
5. Make sure that you have located the activity to the desired level of reporting.

6. Note the code number of the chosen task and use that number in your time reporting.
7. If there is any doubt, review your choices with your supervisor.

Example:

An engineer in Design has worked 10 hours on a Joint Power Agreement. She is advised to report to Level 7 her time.

She reviews the Guide to find that agreements are handled in Level 4 Task 3 and there are only two choices under Summary Task 3. At Level 5, Major Task 205 “Obtain Permits, Agreements and Route Adoptions” is the closest. By reviewing the sub-tasks for this 205 Task, work on a Joint Power Agreement is found as a sub-task to Activity 205.35.15 “Prepare and Execute Cooperative Agreement for Construction”.

In the Time Reporting System, after verifying her coding choice with her supervisor, she would show 10 hours of work to the project with 205 in the Agency Object field and P3515 in the MSA field.

Reporting Employee Time using the WBS

CALTRANS		TIME REPORTING		Page 1 of 2		012D Y	
		DIANA HUNT					
Week of May	Sun.	Mon.	Tue.	Wed.	Thr.	Fri.	Sat.
that is open	28	29	30	01	02	03	04
	Off			Off			
Day	Hours	Pay Lev Rel	EZ CC	Chg. Dist EA	Sub Job	Spec Desq	FA AO MSA Save
29	08.0	R	S_ _	99 123400	_____	(1) _____	1 165 _____
30	08.0	R	G_ _	99 234500	_____	(2) _____	1 165 P15 _____
01	08.0	R	H_ _	99 345600	_____	(3) _____	1 165 P1510 _____
02	04.0	R	_ _ _	99 411110	_____	(4) _____	2 165 0 _____(5)
02	04.0	R	_ _ _	99 412200	_____	(4) _____	2 165 015 _____
03	04.0	R	_ _ _	99 413300	_____	(4) _____	2 165 01510 _____(6)
03	04.0	R	_ _ _	99 414400	_____	(4) _____	2 890 _____(7)
Day	LvHrs -	Lev Rel-	- - - -	(Reason for Absence) - - - -			
___	___	___	___	___			
___	___	___	___	___			

* F7-Pg Bwd * F8-Pg Fwd * F9-Totals * F10-Pay Cd * F11-Lv Cd * F12-Rel Cd

* F1-Help * F2-EZ/CC Code * F4-Send Supvs * F5-Leave Bal * F6-Save
Make entries. Put cursor at your selection. Press Enter. * F3-Exit

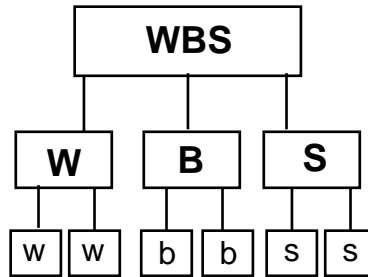
Example: The employee is from the fictitious District 99 and is working on environmental studies, especially wetlands studies. The employee has been advised which projects are being managed to which level of the WBS for the Environmental Studies Summary Task. For ease of reference, here are the WBS Levels for the work involved:

Level 5 165 Perform Environmental Studies and Prepare DED

Level 6 165.15 Perform Biological Studies

Level 7 165.15.10 Perform Wetlands Study

- ① April 29 8 hours of Environmental Study charged to a EA 123400 at Level 5
- ② April 30 8 hours of Biological Studies charged to a EA 234500 at Level 6
- ③ May 1 8 hours of Wetlands Study charged to a EA 345600 at Level 7
- ④ May 2 4 hours of Oversight of a consultant hired by CT to perform Environmental Studies (Level 5) on EA 411110
- ⑤ May 2 4 hours of Oversight of a consultant hired by CT to perform Biological Studies (Level 6) on EA 412200
- ⑥ May 3 4 hours of oversight of a consultant hired by CT to perform Wetlands Study (Level 7) on EA 413300
- ⑦ May 3 4 hours of oversight work for others for a Local Agency or its consultant on EA 414400



WBS Task Definitions

The following pages contain the descriptions, sub-tasks, and end products for the WBS levels 5 and 6, and for level 7 where it is used.

For quick reference, a listing of the WBS tasks without descriptions is reprinted for you in the Appendix D.

100 Perform Project Management

Work involved in the management of Capital Outlay Projects to insure delivery of a quality project on schedule and within budget. Typical duties include: Overseeing the development of project scope and cost (PID); Development and maintenance of project workplans (schedules, resources, cost input and analysis) using established scope and cost; Maintenance of project data in various Corporate Databases such as PMCS, PISA, and TRAMS, including establishing Expenditure Authorizations; General liaison with local agencies and other project stakeholders.

100.05 Develop & Manage Schedule and Support Budget

100.05

All activities with regard to the development and management of the project schedule and support budget, from project initiation through completion of the project . Tasks include development and management of the project workplan (baseline schedule and support budget), work agreements, processing Project Change Requests (PCRs) for schedule changes ONLY, tracking expenditures, allocation of resources, and earned value analysis. This activity includes the functional manager's effort in developing and maintaining work agreements, scheduling, and statusing.

Sub-tasks:

- 100.05.05 Develop & Manage Initial (PID) Project Schedule and Support Budget - This schedule and budget is for development of the PID only. Development and management of the baseline schedule and budget is managed under 100.05.10.
- 100.05.10 Develop and Manage Baseline Schedule & Support Budget
Includes development and management of the project workplan for activities between programming and project completion. Includes functional effort in developing and managing delivery schedules, and appropriate risk management related to schedule.
- 100.05.15 Develop & Maintain Work Agreements
- 100.05.20 Monitor Expenditure Information

End product:

- Support Cost Estimate For Various Project Development Work packages.
- Schedule For Various Project Development Work packages.
- Work Agreements With Functional Areas
- Project Workplan

100.10 Maintain Project Data**100.10**

All activities necessary to maintain project data:

- Review and Update Statewide Databases (Project Management Control System (PMCS), TRAMS, and XPM.)
- Request Expenditure Authorizations
- Status Projects
- Maintain Project Capital (Construction and R/W) Cost

Sub-tasks:

100.10.05 Maintain Project Data in Project Management Database

100.10.10 Obtain EA's and Maintain Accounting Data

100.10.95 Maintain "Other" Data

End product:

NA

100.15 Respond to Internal & External Requests for Information**100.15**

All activities with regard to responding to request for information in reference to the project.

NOTE: This activity is not intended to include the public participation process (found in activities 150,165 and 175) or requests for information regarding any WBS activity (that should be included under same WBS activity).

- Preparation of Response To Legislative Referrals
- Preparation of Management Reports
- Preparation of Project Fact Sheets
- General Public and Public Agency Inquiries

Sub-tasks:

- Response To Legislative Referral
- Letters Regarding The Project

End product:

NA

100.20 Procure External Resources**100.20**

All activities necessary to procure and administer consultant or other external resources for project development support. Includes activities involved in consultant contracts administered by a local agency for joint or local funded projects.

Sub-tasks:

100.20.05 Obtain Consultants - This includes:

- Development Of Contract Scope Of Work
- Request for Qualifications (RFQ)
- Request for Proposals(RFPs).
- The Consultant Selection Process
- Contract Negotiations

100.20.10 Administer Consultant Contracts - This includes:

- Review Of Progress Pay
- Contract Scope Changes
- Contract Management
- Prepare Work Agreements and Task Orders

End product:

- Completion of consultant-resourced work packages and associated contract management activities.

100.25 Manage Project Scope**100.25**

Activities, subsequent to the approval of the PID, necessary to manage the project scope.

Sub-tasks:

- Project Change Requests for Scope and Costs changes
- Continued review of the project scope to assure that the project meets the project need and purpose.
- Management of the capital cost of the project.
- Risk Management related to scope.

End product:

- Completed project that meets “need and purpose” which has been constructed within the approved cost.

150 Develop Project Initiation Document (PID)**150**

Work involved in the preparation, review, and approval of a Project Initiation Document such as a PSR, PSSR, NBSSR, etc. (Includes minor survey effort directly related to PID)

150.05 Define Transportation Problem & Assess Site**150.05**

This activity includes three major tasks:

1. Compiling and reviewing existing background information that may impact the alternatives or the scope of the alternatives under consideration.
2. Developing project constraints and information required to determine the extent of the existing problem and future needs. This should include any necessary discussions with internal and external stakeholders.
3. Analyzing the existing problem and future requirement to determine the project's need and purpose.

Sub Tasks:

- 150.05.05 Obtain and Review Existing Reports, Studies and Mapping - This includes Planning documents (such as Transportation Corridor Report, Regional Transportation Improvement Program, Regional Transportation Program, Congestion Management Plan Tribal Transportation Plan), As-builts, base mapping, existing surveys and R/W maps, TASAS and Pavement Management System (PMS) adjacent projects under development. Initial field reviews are also included.
- 150.05.10 Perform Geological Hazards Review - Normally this activity is limited to a review of the existing studies and a field review of the area.
- 150.05.15 Perform Utility Search - Normally this activity is limited to a review of the existing plans/As-builts and a field review of the area.
- 150.05.20 Identify Environmental Constraints - Normally this activity is limited to a review of the existing studies and a field review of the area.
- 150.05.25 Prepare Traffic Forecasts/Modeling
- 150.05.30 Perform Surveys and Mapping for PID. NOTE: This activity does not include developing detailed design surveys or photogrametric mapping that will be used throughout the project. That effort should be addressed in activity 185.10.
- 150.05.35 Define Problem - Analyzing the available information to determine the project's need and purpose and general scope. In the case of a highway project this would include determining the existing and future Level of Service (LOS) in the no build scenario, a corridor analysis to determine deliverable volumes, determining the general perimeters such as the required number of lanes, and analyzing traffic accident history.

End Product:

- Purpose and Need Statement.
- Adequate information should exist to begin developing alternatives.

150.10 Develop Initial Alternatives**150.10**

This activity includes identifying all potential alternatives and reaching consensus with internal/external stake holders on the alternatives that will be addressed in the PID. This activity includes establishing the study limits of the various alternatives to be analyzed in the PID.

Sub Tasks:**150.10.05 Obtain Public / Local Agency Input**

Includes but is not limited to:

- Development of Community Action Plan
- Initial information or preliminary Scoping Meetings w/public & local agencies
- Reaching consensus on which alternatives to address in the PID

150.10.10 Perform Value Analysis - This activity includes reviewing VA procedures, identifying VA team, conducting the analysis, and recommendations to management and the PDT.**150.10.15 Develop Concept Geometrics**

Development of the basic strategy options to meet the project need and purpose. Including developing horizontal & vertical alignment, cross sections, preliminary staging plans, strip maps, right of way requirements, rehabilitation strategies and reviews by FHWA and Caltrans for all alternatives under considerations.

End product:

General scope and study limits of the alternatives determined to be carried forward for further study. These alternatives are now ready for further analysis to determine project features, cost, and cost effectiveness.

150.15 Analyze Alternatives**150.15**

This activity is required to develop the necessary scope and cost of each alternatives to be presented in the PID. Costs developed in this activity will be used for programming purposes; consequently, the analysis should be of sufficient detail to identify all potential costs. Also included in this activity are tasks required to assess the adequacy of the alternatives to meet the project's need and purposes.

Sub-tasks:

- 150.15.05 Prepare R/W Data Sheets - Includes assessing R/W requirements and preparing all right of way cost estimates, obtaining public records, and preparing Cost Estimates Maps
- 150.15.10 Assess Utility Relocation Requirements - Identifying utility needs, inspecting facilities and preparing utility estimate for inclusion in the Right of Way Data Sheets.
- 150.15.15 Determine Railroad Involvement
- 150.15.20 Prepare Preliminary Geotechnical Report
- 150.15.25 Prepare Preliminary Materials Report - Includes initial deflection study, corrosion study, and identification of need for material sites.
- 150.15.30 Prepare Structures Advance Planning Study
- 150.15.35 Perform Multimodal Review
This review should address temporary construction and permanent impacts as well as possible improvements to:
 - Pedestrian facilities
 - Bicycle facilities
 - Transit facilities
 - Park and Rides
 - Equestrian Facilities
 - Weight/Inspection Facilities
 - Rest Area Facilities
- 150.15.40 Perform Hydraulic Review - Includes review and inspection of existing facilities to determine the need to upgrade or replace the existing drainage system (includes culvert inspection study).
- 150.15.45 Perform Traffic Capacity Analysis
- 150.15.50 Perform Traffic Studies
This activity includes:
 - Prepare preliminary traffic design
 - Prepare Traffic Management Plan
 - Perform traffic operational and safety analysis.
 - Traffic system and signal system review
 - Perform Skid Tests
- 150.15.55 Develop Construction Estimates

End product:

In conjunction with 150.20 (Perform Preliminary Environmental Evaluation) completion of this activity should establish project scope, cost, and feasibility for presentation in the PID and programming.

150.20 Perform Preliminary Environmental Evaluation**150.20**

This activity identifies the potential environmental impacts of each alternative, as well as potential mitigation costs. Costs developed in this activity will be used for programming purposes; consequently, the analysis should be of sufficient detail to identify all potential costs. For those projects where the initiation document is combined with the project report/environmental document (such as PSSRs and PSR/PR), this activity also includes those tasks required for the environmental document.

Sub-tasks:

- 150.20.05 Perform Initial Noise Study
- 150.20.10 Perform Hazardous Waste Investigation (Initial Site Assessment (ISA))
- 150.20.15 Perform Landscape/Aesthetic Analysis
- 150.20.20 Perform Initial NEPA/404 Coordination
Includes Pre-Consultation with appropriate resource agencies to reach consensus on need and purpose, avoidance alternatives, and feasible alternatives.
- 150.20.25 Perform Initial Biology Study
- 150.20.30 Perform Initial Culture Resource Archaeology Study
- 150.20.35 Perform Initial Culture Resource Section 106/Historic Study
- 150.20.40 Perform Initial Socioeconomic, Community Studies, Land Use and Growth Issues
- 150.20.45 Perform Initial Air Quality Study
- 150.20.50 Perform Initial Water Quality Studies
- 150.20.55 Perform Initial Floodplain Study
- 150.20.60 Prepare Preliminary Environmental Evaluation - Includes preparation of a Categorical Exemption/Exclusion for those projects where the PID is combined with project report/environmental document.
- 150.20.65 Perform Initial Paleontology Study
- 150.20.70 Perform Initial Native American Coordination

End Product:

In conjunction with 150.15 (Analyze Alternatives) completion of this activity should establish project scope, cost, and feasibility for presentation in the PID and programming.

150.25 Prepare and Approve PID (PSR, PSSR, etc.)**150.25**

This activity includes all tasks required to develop the PID text and exhibits, as well as the effort required to circulate, review and update the PID. This activity also includes development and approval of any required design exceptions and /or a FHWA access modification request. It also includes the development and approval of any supplemental PIDs.

Sub-tasks:

- 150.25.05 Prepare Draft PID
- 150.25.10 Prepare and Obtain Approval for Exception to Design Standards
- 150.25.15 Prepare and Approve Access Modification Request
- 150.25.20 Circulate, Review & Approve PID - This includes the PSSR Scoping Team field review.

End Product:

This activity is complete with the approval and distribution of the PID.

160 Perform Preliminary Engineering Studies and Prepare Draft Project Report

Work involved in conducting preliminary engineering studies used in the development of a draft project report. (Includes minor survey effort directly related to the project report.)

NOTE: For projects not requiring a Draft Environmental Document, the final product of this activity is actually the project report.

160.05 Review Project Information

160.05

This activity includes review of the information assembled and developed during the PID, as well as a preliminary assessment of what additional information may be required during the project report and environmental document development.

Sub-tasks:

- 160.05.05 Review Approved PID
- 160.05.10 Review Geotechnical Information
- 160.05.15 Review Materials Information
- 160.05.20 Review Traffic Data and Forecasts
- 160.05.25 Review Geometrics
- 160.05.30 Review Project Scope
- 160.05.35 Review Project Cost Estimate

End Product:

Understanding of project need and purpose, scope, cost and what additional studies may be required during the Project Report development.

160.10 Perform Engineering Studies

160.10

This activity includes developing in more detail or updating those studies initiated during the PID. It also includes those additional engineering studies required to address new alternatives or revisions developed during the environmental process.

Sub Tasks:

- 160.10.05 Perform Surveys and Mapping for Project Report
(detailed project surveys and mapping included in 185.10)
- 160.10.10 Prepare Traffic Forecasts/Modeling
- 160.10.15 Prepare Geometric Plans for Project Alternatives - This includes horizontal and vertical alignments, cross sections, typical sections, construction staging/detours and building plans.
- 160.10.20 Perform Value Analysis
- 160.10.25 Perform Hydraulics/Hydrology Studies

- 160.10.30 Develop Highway Planting Design Concepts - Includes mitigation planting, replacement planting, and new planting.
- 160.10.35 Perform Traffic Operational Analysis - Includes any additional capacity analysis as well as an operational review of the proposed alternatives.
- 160.10.40 Review and Update Right of Way Data Sheet - Includes assessing R/W requirements and preparing or updating right of way cost estimates.
- 160.10.45 Re-assess Utility Impacts - Identifying utility needs, inspecting facilities and preparing utility estimate for inclusion in the Right of Way Data Sheets.
- 160.10.50 Perform Railroad Study
- 160.10.55 Perform Multi-modal Study
This review should address temporary construction and permanent impacts as well as possible improvements to:
 - Pedestrian facilities
 - Bicycle facilities
 - Transit facilities
 - Equestrian Facility
 - Weight/Inspection Facilities
 - Rest Area Facilities
- 160.10.60 Perform Park & Ride Study
- 160.10.65 Perform Relinquishment and Vacation Study
- 160.10.70 Perform Traffic Studies
This Includes:
 - Prepare preliminary traffic design
 - Prepare Traffic Management Plan
 - Perform Safety Analysis
 - Traffic system and signal system review
- 160.10.75 Prepare/Update Materials Information for Project Report - Includes identification of Material sites and any required lab testing.
- 160.10.80 Prepare/Update Geotechnical Information
- 160.10.85 Prepare Structures Advanced Planning Studies for New Alternatives
- 160.10.90 Prepare HOV Report

End product:

Refinement of project alternatives, and preliminary design of all project features adequate for discussion of project impacts in the environmental document and suitable for the initiation of final design.

160.15 Prepare Draft Project Report**160.15**

This activity includes all tasks required to develop the text, exhibits and cost estimate required for a Draft Project Report. This activity includes development and approval of any design exceptions that were not addressed during the PID. If only a Categorical Exemption/Exclusion is required, the draft Project Report is in itself the Final Project Report, and WBS 180 should not be used.

Sub-tasks:

- 160.15.05 Prepare Cost Estimates for Alternatives
- 160.15.10 Prepare Fact Sheet for Exceptions to Design Standards
- 160.15.15 Obtain Approval for Exceptions to Encroachment Policy
- 160.15.20 Prepare Draft Project Report
- 160.15.25 Circulate, Review, & Approve Draft Project Report

End product:

This activity is complete with the approval and distribution of the Draft Project Report, any Supplemental Draft Project Reports, or in the case where no draft environmental document is required, the final Project Report.

165 Perform Environmental Studies and Prepare Draft Environmental Document (DED)

Work involved in the performance of environmental studies needed to determine the environmental impact of a Capital Outlay Project and preparation of the draft environmental document. DOES NOT include activities beyond study completion needed to obtain resource agency (Corps of Engineers, Fish and Wildlife, etc.) permits. These efforts should be performed under activity 205. The end-product of this activity is approval to circulate the CEQA/NEPA DED or approved CE.

165.05 Perform Environmental Scoping and Select Alternatives for Study 165.05

Environmental Scoping and Preparatory Tasks which initiate the environmental evaluation process.

Sub-tasks:

See level 7 activity definitions.

End Product:

Alternatives selected for environmental study.

165.05.05 Review Project Information

Obtain and examine information from prior stages in the project development process related to the environmental evaluation.

Sub-tasks:

- Obtain and examine PID and related documents.
- Obtain and examine project plans from earlier stages.
- Discuss and verify initial Purpose and Need, Alternatives, and previous environmental evaluations with Project Manager.
- Obtain and examine RTP and RTIP listings, regional emissions analyses.
- Verify compliance with NEPA/404 MOU process at prior stages.
- Verify Clean Air Act conformity status of project and alternatives.
- Start Project File.

End product:

- Initial Environmental Project File Setup

165.05.10 Perform Public and Agency Scoping Process

Prepare and publish legal notices, and perform all public and agency participation tasks related to the overall environmental product prior to circulation of the Draft Environmental Document to the public.

Sub-tasks:

- Prepare written notification of initiation of environmental studies.
- Prepare Draft Notice of Intent (NOI) (NEPA requirement -- EIS only) and submit to FHWA for Federal Register publication.
- Prepare and circulate Notice of Preparation (NOP) (CEQA requirement -- EIR only).
- Conduct and document Public and Agency environmental scoping meeting(s)
- Prepare and coordinate with MPO/RTPA, and Tribal Transportation Planning Agency a Public Participation Plan, meeting MPO, SIP, FHWA Metropolitan Planning and tribal requirements.
- Conduct and document public and agency open house and workshop meetings during development of the environmental document.
- Conduct and document other formal and informal public participation activities such as citizen's committees, focus groups, presentations to political bodies, and media appearances, not directly related to preparation and coordination of a technical work product.
- Prepare & circulate newsletters and other public informational and press materials
- Prepare and maintain Project Mailing List

End Product:

This WBS task does not have a single deliverable indicating completion of the work package. Work on this WBS activity may occur throughout the performance period of 165-level work.

- Draft Notice of Intent for FHWA publication
- Published Notice of Preparation with mailing list and State Clearinghouse documentation.
- Public Participation Plan
- MPO/APCD comments on and concurrence with Public Participation Plan.
- Minutes, Records of Meeting, Newsletters, press materials, and Public Participation Reports for meetings and other public participation activities.
- Project Mailing List

165.05.15 Select Alternatives for Further Study

The Project Manager, Caltrans Management, and the Project Development Team select alternative(s) for further study in the Draft Environmental Document and Draft Project Report. The selection process and criteria are documented for use in later stages of the project. Alternatives are based on those developed and documented in the Project Initiation Document, with additions or deletions as required.

NOTE: If the project is not exempt from conformity requirements or is otherwise considered "regionally significant", and a Major Investment Study (MIS - Federal ISTEA requirement) has not yet been done, this activity would include the required MIS effort.

Sub-tasks:

- Perform preliminary alternatives analysis
- Consider public comment and participation (via the scoping process in task 165.05.10)
- Review alternatives analysis with Project Development Team
- Prepare and review alternative selection documentation
- Prepare and obtain MPO and transit agency approval of Major Investment Study (MIS) if required and if not previously performed by MPO or Caltrans.
- Preliminary alternatives analysis report (used by PDT and public)
- Public and PDT Review documentation and comments
- Response to comments

End Product:

- Alternative(s) selection memo
- NOP/NOI Alternatives discussion (EIR/EIS projects only)
- Major Investment Study (MIS) if necessary

165.05.20 Prepare Maps for Environmental Evaluation

Prepare environmental study maps for the alternatives selected for further studies. This activity includes preparation of only those maps not produced as part of other activities (such as 160.10.15-Prepare Geometric Plans for Project Alternatives) that are necessary for publishing in study reports and the Environmental Document.

Sub-tasks:

Mapping and plans include the following:

- a) Project Vicinity Map.
- b) Project Location Map.

- c) Proposed Project/Alternatives Plans.
- d) Project R/W and adjacent parcel mapping.
- e) Hydrologic and flood plain mapping.
- f) Seismic and environmental geology mapping

End product:

Adequate project maps for initiation of environmental studies for the selected alternatives. However, this activity may continue through the environmental process to address modifications and maps required for the related study reports and Environmental Document

165.10 Perform General Environmental Studies**165.10**

Perform environmental technical studies, other than for Biology and Cultural Resources and prepare technical reports and other work products documenting study results.

Sub-tasks:

See level 7 activity definitions.

End Product:

All technical study reports necessary for the preparation of the environmental document for a project, other than those related to Biology (See WBS activity 165.15) and Cultural Resources (see WBS activity 165.20).

165.10.05 Perform Surveys & Mapping for Environmental Studies

Perform field surveys to augment existing base mapping and to determine the location of environmental resources.

Sub-tasks:

- Prepare for and perform field surveys required for environmental studies. Detailed project surveys and mapping is included in WBS 185.10.
- Provide photographs to be used in the environmental study process

End Product

Site maps for environmental studies

165.10.10 Obtain Rights of Entry for Environmental Studies

Obtain access to private land as needed for environmental technical studies

Sub-tasks:

- Identify properties where access is needed, and for what types of studies.

- Where formal rights of entry are needed, contact property owners and obtain it.
- Provide identification documents for field personnel to use when requesting informal entry permission.

End Product

- Formal Rights of Entry
- Informal entry documents - Includes verbal agreements. etc.
- Personnel identification documents

165.10.15 Perform Socioeconomic, Land Use, and Growth Studies

Perform all activities related to socioeconomic, land use, and growth inducement technical studies for use in the environmental document, and prepare a technical report documenting study results.

NOTE: Tasks that are common with draft relocation impact study are done under this activity.

Sub-tasks:

- Perform ethnicity and economic studies to determine the characteristics of the communities affected by the project. This includes Environmental Justice Requirements.
- Perform land use studies to determine the relationship of the project to local, regional, and other planning, and identify compatibility issues with existing land uses.
- Perform growth inducement studies.
- Prepare interim reports for internal and peer review.
- Prepare technical report with mapping & other graphics.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.
- Coordinate with local and regional agencies, ethnic and community groups, and business organizations.
- Farmland Evaluation and Coordination

End Product:

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo with proposed mitigation measures and mitigation effectiveness evaluation

165.10.20 Perform Visual Impact Analysis

Perform all activities related to Visual Impact Analysis for use in the environmental document, and prepare a technical report documenting study results.

Sub-tasks:

- Perform a visual inventory of the project area.
- Prepare visual simulations of the proposed alternatives.
- Coordinate with local agencies, citizens groups, and business groups related to community design and scenic issues.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.
- Perform Scenic Resource Determination

End product:

- Visual Simulations and Exhibits
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo with proposed mitigation measures and mitigation effectiveness evaluation

165.10.25 Perform Noise Study

Perform all activities related to noise impact analysis for use in the environmental document, and prepare a technical report documenting study results.

Sub-tasks:

- Identify sensitive receptors and analysis locations.
- Collect existing noise information, including monitoring data from ARB and APCD sites.
- Perform noise modeling.
- Develop estimates of effectiveness for alternative mitigation measures.
- Prepare technical report with preliminary barrier plans.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End product:

- Preliminary Noise Barrier Plans
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

165.10.30 Perform Air Quality Study

Perform all activities related to air quality impact analysis for use in the environmental document, and prepare a technical report documenting study results.

Sub-tasks:

- Identify sensitive receptors and analysis locations.
- Collect existing CO data
- Perform CO and/or other monitoring. NOTE: Scheduling of this activity should account for appropriate study windows.
- Perform microscale modeling to predict future pollutant concentrations with no project and all applicable alternatives.
- Verify Federal Clean Air Act conformity status of the project; coordinate with regional and air quality agencies to obtain concurrence in the conformity status of the project, and carry out additional conformity-related activities, if necessary, including regional modeling of additional alternatives and recommendations for RTP and/or RTIP revisions.
- Develop estimates of effectiveness for alternative mitigation measures.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End product:

- Monitoring Report
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo
- Evidence of coordination with and concurrence by MPO and air quality agencies

165.10.35 Perform Water Quality Studies

Perform all activities related to water quality impact analysis for use in the environmental document, and prepare a technical report documenting study results.

Sub-tasks:

- Identify receiving waters, their regulatory status, and their uses.
- Collect existing water quality information, including monitoring data from other agencies as available.

- If necessary due to inadequate existing information, conduct on-site sampling and/or monitoring.
- Perform modeling if necessary and appropriate to predict future pollutant concentrations with no project and all applicable alternatives.
- Verify applicability of Sole Source Aquifer, NPDES, and other laws and regulations to the project and design of drainage facilities.
- Develop estimates of effectiveness for alternative drainage facilities and mitigation measures.
- Prepare technical report with mapping & other graphics.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End Product:

- Monitoring Report(s)
- Permit application materials if required
- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo
- Evidence of coordination with and concurrence by MPO and water quality agencies

165.10.40 Perform Energy Studies

Perform all activities related to energy impact analysis for use in the environmental document, and prepare a technical report documenting study results.

Sub-tasks:

- Perform modeling or use other analysis methods to predict future energy use with no project and all applicable alternatives.
- Verify applicability of energy-related laws and regulations to the project and design of drainage facilities.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End Product:

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

165.10.45 Prepare Summary of Geotechnical Report

Prepare summary of Preliminary Geotechnical Report for inclusion in the Draft Environmental Document.

Sub-tasks:

- Review Preliminary Geotechnical Report
- Prepare abstract for inclusion in Environmental Document text.

End Product:

- Technical report Abstract for use in Environmental Document text

165.10.50 Perform Preliminary Site Investigation for Hazardous Waste

Perform all activities related to one or more Preliminary Site Investigations as defined under Caltrans procedures, and prepare a technical report documenting study results.

NOTE:

1. If the Initial Site Assessment was not prepared during the PID, ISA work completed during the environmental process should be captured under 150.20.10.
2. Typically this work may be done through the consultant contract process. Consultant selection and administration activities should be captured under the 100.20.

Sub-tasks:

- Review and, if necessary, update Initial Site Assessment.
- Transfer funding from project to Haz. Waste Contract to cover task order cost.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End product:

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

165.10.55 Prepare Draft Right of Way Relocation Impact Document

Perform all activities related to relocation impact analysis for use in the environmental document, and prepare a technical report documenting study results.

NOTE: Tasks that are common with Draft Relocation Impact study and 165.10.15 (Perform Socioeconomic, Land Use, and Growth Studies) are done under this 165.10.15.

Sub-tasks:

- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End Product:

Technical Report and associated materials

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

165.10.60 Prepare Location Hydraulic/Floodplain Study Report

Perform all activities related to preparing a Location Hydraulic Study for use in the environmental document and Draft Project Report, and a flood plain study for use in the environmental document, and prepare a technical report or reports documenting study results.

NOTE: These studies are usually combined into one document, since they address largely the same issues. The Location Hydraulic Study is a specific FHWA requirement where a project will encroach on a flood plain. The Flood plain Study may consider a broader range of issues than FHWA requires for the Location Hydraulic Study, and is usually part of the information required to deal with the Corps of Engineers in the 404 permit process.

Sub-tasks:

- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End Product:

- Technical Report
- Technical report Abstract for use in Environmental Document text
- Transmittal memo

165.10.65 Perform Paleontology Study

Tasks involved with the identification of paleontological resources within the project's study area. This activity would be applicable only in region where there is a known high potential for surface or shallow deposits on strata containing important paleontological specimens.

Sub-tasks:

- Identification of geologic strata potentially affected by project related activities (including borrow sites, cuts and haul roads) and assessment of its potential to contain significant paleontological resources.
- Literature search of paleontological resources in the region.
- Consultation with paleontologists with expertise in the region
- Develop preliminary mitigation plan, if necessary

End Product:

Summary report of conclusions for inclusion in the Environmental Document.

Preliminary paleontological work plan

165.15 Perform Biological Studies**165.15**

Perform all activities related to preparing Biological Studies related to the project.

Sub-tasks:

See level 7 activity definitions.

End Product:

The biological study reports necessary for the preparation of the environmental document for a project.

165.15.05 Perform Biological Assessment

Perform all tasks related to endangered species and other studies required to complete a Biological Assessment report.

Sub-tasks:

- Obtain endangered species list for project area.
- Perform presence/absence and other field studies.
- Determine effect on species.
- Perform formal and informal coordination with resource agencies.
- Prepare technical report.
- Prepare abstract(s) for inclusion in Natural Environment Study and Environmental Document text.

End Product:

- Biological Assessment Report
- Documentation of coordination
- Memo discussing recommended and/or required mitigation measures

165.15.10 Perform Wetlands Study

Perform all tasks related to identifying, studying project effects on, and determining mitigation for wetlands in the project area, and prepare a report.

Sub-tasks:

- Coordinate endangered species information with Biological Assessment (165.15.05) work.
- Delineate wetlands in the project area to Corps of Engineers standards, and obtain Corps approval of delineation.
- Determine effect on species and amount/type of wetlands affected.
- Prepare technical report.
- Prepare abstract(s) for inclusion in Natural Environment Study and Environmental Document text.

End Product:

- Technical report
- Wetland Delineation materials
- Memo discussing recommended and/or required mitigation measures

165.15.15 Perform Resource Agency Permit Related Coordination

Effort involved directly with formal consultation and coordination required to complete biological studies. This work may result from studies done under any of the other biological task areas, and may be required in order to complete those studies. The purpose of separating this effort is to identify the workload involved with permit and mandatory consultation work in the biology field.

The intent of this activity is to gain consensus with the resource agencies on the impacts and mitigation's on the proposed alternatives necessary for completion of the DED. Subsequent effort in resolving comments from the DED is covered in activity 175. Effort required to obtain permits after project approval is included in activity 205. This includes coordination with the Corp. of Engineers under the NEPA/404 Coordination MOU process.

Sub-tasks:

- Obtain concurrence by the Corp. of Engineers with initial purpose and need and range of alternatives, per NEPA/404 MOU requirements.
- Coordinate work with Biological Assessment (165.15.05), Wetlands Study (165.15.10), and Natural Environment Study (165.15.20) work.
- Perform Section 7 and/or Section 10 Consultation with U.S. Fish & Wildlife Service.
- Perform formal consultation and obtain concurrence in biological and wetland studies under the NEPA/404 Coordination MOU process.
- Perform early consultation with Calif. Dept. of Fish and Game regarding biology issues related to possible Section 1601/1603 permits.
- Perform formal and informal biology-related coordination with other resource agencies as needed.

End Product:

Documentation of various types of consultation and coordination for inclusion in other biological study reports and the environmental document.

165.15.20 Prepare Natural Environment Study Report

Based on information developed in the Biological Assessment and Wetlands Study reports, and other information as directed by technical guidance, prepare a Natural Environment Study report. This report is the master document covering compliance with biological study and consultation requirements, and providing language and mitigation measures for use in the environmental document.

Sub-tasks:

- Review other biological study work.
- Prepare technical report.
- Prepare abstract for inclusion in Environmental Document text.
- Prepare transmittal memo outlining study results, potential significance of impacts and significance criteria, and proposed mitigation measures.

End Product:

- Technical Report
- Abstract for use in Environmental Document
- Memorandum summarizing Technical Report, discussing impacts and their potential significance, and recommending or requiring mitigation measures

165.20 Perform Cultural Resource Studies**165.20**

Perform studies and prepare reports related to cultural resources (archaeological, and historical studies) to meet the requirements of CEQA, NEPA, Section 106 of the National Historic Preservation Act, and Section 5024 of the Public Resources Code. Includes consultation with Native American communities.

Sub-tasks:

- 165.20.05 Prepare Area of Potential Effect (APE) Map
- 165.20.10 Perform Phase I Archaeology Study - Includes Archaeological Study Report (ASR)
- 165.20.15 Prepare Historical Study Report (combined HSR, HRER, and HASR)
- 165.20.20 Perform Extended Phase I Archaeology Study (XPI) - Includes Native American Consultation
- 165.20.25 Perform Phase II Archaeology Study - Includes Native American Consultation and Phase II Report
- 165.20.45 Prepare Historic Property Survey Report (HPSR) / Determination of Eligibility - CEQA only documents refer to this as the Historic Property Compliance Report (HPCR).
- 165.20.50 Prepare Finding of Effect
- 165.20.55 Perform PRC 5024 Consultation

End product:

Transmittal memo with HPSR and/or documentation of PRC 5024 Consultation that details study results, State Historic Preservation Officer (SHPO), and other consultation, significance of impacts and criteria for significance, and recommended or required mitigation measures.

165.25 Prepare and Approve Draft Environmental Document**165.25**

Prepare Draft Environmental Document (DED) with all attachments or Categorical Exemptions/Exclusion Documentation. Conduct all necessary in-house and external reviews (NEPA and CEQA documents) and obtain US DOT (Federal Highways (FHWA), FTA, or other Administration) approval to circulate NEPA Document.

Sub-tasks:

- 165.25.05 Prepare Draft Environmental Document - Analyze technical studies and prepare DED (CEQA draft ND/IS or EIR; NEPA draft EA or EIS; typically combination CEQA/NEPA document). Activity includes the coordination of the studies required for the ED.
- 165.25.10 Prepare Section 4(f) Evaluation
- 165.25.15 Prepare Categorical Exemption / Categorical Exclusion (CE) Determination - Includes review, circulation and approval.
- 165.25.20 Conduct Environmental PEER & Other Reviews - Carry out formal and informal review of DED within Caltrans. Revise DED as required to address comments. Perform preliminary US DOT review if applicable.
- 165.25.25 Obtain Approval to Circulate - Includes time and effort required to resolve US DOT comments.

End Product:

Completed CE documentation or approval to circulate DED.

175 Circulate Draft Environmental Document and Select Preferred Project Alternative

Work involved in the circulation of the Draft Environmental Document, obtaining and responding to public comment, and selecting a preferred alternative.

175.05 Circulate DED

175.05

Preparation for and circulation of the DED. This activity does not include the public hearing process and responding to comments.

Sub-tasks:

- 175.05.05 Prepare Master Distribution and Invitation Lists - This activity includes updating the existing project's mailing list and preparing the distribution list for all interested individuals, groups, or governmental agencies.
- 175.05.10 Prepare Notices Regarding Public Hearing & Availability of DED - This activity includes notice of availability of the DED, mailed notifications of the public hearing, either the published "Notice of Opportunity" or the first published public hearing notice.
- 175.05.15 Publish and Circulate DED - Includes formal public circulation period, reproduction and mailing of the DED. This activity does not include the public hearing process and responding to comments. Includes transmittal of DED to CTC and preparation of CTC agenda item.
- 175.05.20 Obtain Federal Consistency Determination (Coastal Zone)

End Product:

End of Circulation period. This activity does not include the public hearing process and responding to comments.

175.10 Prepare for and Hold Public Hearing

175.10

Perform all tasks for the purpose of preparing and holding Public Hearing for a project.

Sub-tasks:

- 175.10.05 Determine Need for Public Hearing Process - Based upon the response to the "Notice of Opportunity" for a public hearing, meetings are scheduled with the interested parties to determine if a public hearing is required..
- 175.10.10 Arrange for Public Hearing Logistic - Includes all formal arrangements for the public hearing including:

- Select and obtain public hearing officer
 - Obtain hearing room
 - Obtain security
 - Obtain court reporter
 - Obtain language interpreters
- 175.10.15 Prepare Displays for Public Hearing - Preparation of any displays, exhibits, equipment, signs, models, or other physical features to used at the public hearing.
- 175.10.20 Prepare and Publish Notices of Public Hearing and Availability of DED - This includes the second published and all subsequent public hearing notice and general publicity regarding the public hearing. Including
- Display ads
 - Flyers or newsletters mailed / distributed to residents and interested parties
 - Notices on bulletin boards in public places
 - Press release to all media
 - Distribution of notices through schools and service clubs
 - Copies of the notice sent to OPPD
 - Availability of DED
- 175.10.25 Conduct Meeting to Review Map Displays and Discuss Public Hearing
- 175.10.30 Display Public Hearing Maps - Includes either formal or informal display of the maps to be shown at the public hearing, prior to the public hearing.
- 175.10.35 Hold Public Hearing - Includes all remaining activities for the preparation of the public hearing.
- 175.10.40 Prepare and Distribute Record of Public Hearing

End Product:

Distribution of the record of Public Hearing

175.15 Respond to Public Comments and Correspondence**175.15**

Includes the formal response to comments on the DED for the preparation of the Final Environmental Document (FED).

Sub-tasks:

None identified.

End product:

Printed copies of the response to comments or the complete text, figures, tables, etc. ready for inclusion into the FED.

175.20 Select Preferred Alternative

175.20

Select the project's preferred alternative to be carried forward in the Project Report (PR) and Final Environmental Document (FED).

Sub-tasks:

- Assemble all the data needed to make the selection of the preferred alternative.
- PDT and other meetings to select the preferred alternative.

End product:

Minutes of the PDT meeting documenting the selection, and agreements with other agencies.

180 Prepare and Approve Project Report and Final Environmental Document

Work involved in the preparation, review, and approval of a Project Report, a Final Environmental Document, and Notices of Determination and / or Records of Decision.

180.05 Prepare and Approve Project Report

180.05

Includes all work beyond the approval of the Draft Project Report (160.15) leading to and including approval and distribution of the Project Report.

NOTE: If only a Categorical Exemption/Exclusion is required, the draft Project Report is in itself the Final Project Report, and WBS 180 should not be used.

Sub-tasks:

- 180.05.05 Update Draft Project Report - Includes the Preferred Alternative selection and updating the cost estimate.
- 180.05.10 Review and Approve Project Report - Includes any revisions needed from comments made during circulation.

End product:

Approved copies are made and distributed.

180.10 Prepare and Approve Final Environmental Document (FED)

180.10

The DED is updated to identify the rationale of the preferred alternative selection. Includes work on the Final Environmental Document, Section 4(f) Evaluation, Findings, and Statement of Overriding Considerations and approvals of both FHWA and Caltrans.

Sub-tasks:

- 180.10.05 Prepare and Approve FED - This activity includes:
 - Circulation for review
 - Any revisions due to review comments.
 - Review period for the Section 4(f) evaluation
 - Findings
 - Statement of Overriding Considerations
 - Response to comments on the FED
 - Prepare CEQA Certification
 - Request and obtain approval from FHWA and Caltrans
 - Conduct Section 106 Consultation, prepare Memorandum of Agreement and Obtain Concurrence of MOA Parties
 - Conduct Section 7 Consultation
 - Finalize Section 4(f) Statement

- Prepare Floodplain Only Practicable Alternative Finding
 - Prepare Wetlands Only Practicable Alternative Finding
 - Conduct Coordination for Section 404 Permit
 - Finalize Mitigation Measures
- 180.10.10 Public Distribution of FED - Includes reproduction, preparation of a transmittal letter, publication of the Notice of Availability, transmittal of copies of the Federal Register, and distribution of the Final Environmental Document. Includes transmittal of FED to CTC and preparation of CTC agenda item.
- 180.10.15 Prepare Final Right of Way Relocation Impact Document - Complete and update the draft Right of Way Impact Study done during the DED phase.

End Product

Signatures on all of the applicable documents.

180.15 Close Out Environmental Process

180.15

Work involved in preparing the Record of Decision (ROD) and obtaining FHWA approval.

Sub-tasks:

- 180.15.05 Prepare and Approve Record of Decision (NEPA)
- 180.15.10 Prepare and File Notice of Determination (CEQA) - Includes preparation of NOD, copies made and sent to HQ, CTC action and filing, and filing with the Office of Planning and Research.
NOTE: Includes Notice of Determination (NOD) for projects with or without a route adoption or new road connection and projects which are locally funded.

End product:

Notification to the units that the RODS has been signed.

Notification to the District of the completion of the NOD.

185 Prepare Base Maps and Plan Sheets

Work involved in the preparation of geometric base maps and functional base plan sheets, including review of existing project information, gathering appropriate mapping, conducting additional studies. Final products of this activity include Maps-to-R/W and plan sheets to other functional units.

NOTE: All project control surveys and photogrammetric mapping not specifically supporting a different level 5 work package will be performed under this activity.

185.05 Review and Update Project Information

185.05

Initial activities of project design necessary to become familiar with the project purpose and scope. Activities necessary to update project information needed to prepare engineering design reports, perform preliminary design, and determine Right of Way requirements.

- Review Project Reports
- Review Post Miles And Description Of Project
- Review Planning Alignments
- Review Freeway Agreement
- Review Traffic Capacity Requirements
- Review Project Site
- Review/Update Project Cost Estimate
- Confirm Project Purpose And Scope

Sub-tasks:

- 185.05.05 Review Project Concept - Review of existing project information to determine the project purpose and scope.
- 185.05.10 Update Project Information - Updating of project information necessary to determine the project scope and cost. This does not include work needed to prepare a Supplemental Project Report. Work needed for a Supplemental Project Report should be included under WBS Activities 160, 165, 175, and 180 and the project rescheduled accordingly.

End Product:

- Updated Project Information
- Confirmation Of Project Purpose And Scope

185.10 Perform Design Surveys and Photogrammetric Mapping**185.10**

Activities necessary to perform project control surveys, prepare survey and mapping requests, perform design data surveys, and provide photogrammetric mapping.

Sub-tasks:

- 185.10.05 Perform Project Control Surveys
Includes preparing survey request, planning, research, field survey, processing and adjusting data, and preparing project survey control map.
- 185.10.10 Prepare Photogrammetric Map Products
Includes preparing mapping request, flight line and control distribution planning, pre-marking control survey, aero-triangulation, contract administration, 3-D compilation, map assembly, data conversion, quality control and digital terrain modeling.
- 185.10.15 Perform Design Data Surveys
Includes preparing survey request, planning, research, field survey, structure site surveys, processing and adjusting data, necessary to provide project topographic data.

End product:

- Project Mapping
- Project Survey Control

185.15 Perform Preliminary Design**185.15**

This activity includes establishment and any subsequent substantial changes to the project footprint. Design activities with regard to the following preliminary design work:

- Horizontal And Vertical Alignment
- Typical Cross Sections
- Super Elevations
- Earthwork
- Intersection/Interchange Design
- Review Of Geometric Design
- Exceptions To Design Standards
- Includes Delineation Support

Sub-tasks:

- 185.15.05 Perform Roadway and Misc. Design
Includes: Design of horizontal and vertical alignment, typical cross sections, super elevations, earthwork (cut & fill locations).

- 185.15.10 Review Proposed Geometrics
Includes: Routine meetings with OPPD, FHWA, and other units in review of proposed geometric design.

- 185.15.15 Prepare Requests for Exceptions to Design Standards
All work necessary in the preparation of Fact Sheets for exceptions to the Caltrans mandatory and advisory design standards and processing of approval.
- 185.15.20 Perform Value Analysis

End product:

- Completion of base maps (which become skeleton plan sheets) for functional units, suitable for developing the functional PS&E.
- Approved geometric design.

185.20 Prepare Engineering Reports**185.20**

Activities by various functional units to develop project design reports needed to establish design parameters and complete preliminary design (see sub-tasks).

Sub-tasks:

- 185.20.05 Update Traffic Data, Analysis, and Forecasts
- 185.20.10 Prepare Hydrology and Hydraulic Reports
- 185.20.15 Prepare Geotechnical Design Report
- 185.20.20 Prepare Pavement Design Report - Requires all tests, such as deflection study, required to complete structural section design recommendations.
- 185.20.25 Prepare Materials Report
- 185.20.30 Prepare Soundwall Design Report

End product:

- Various Engineering Reports

185.25 Determine Right of Way Requirements**185.25**

Activities necessary to determine right of way needs and prepare maps for submittal to Right of Way. Includes identifying the need for new right of way, permanent easements, temporary construction easements, and railroad involvement. Includes coordination with affected agencies to determine right of way impacts.

NOTE: This includes incorporation of utility R/W needs determined in activity 200.15.

Sub-tasks:

- 185.25.05 Review Project With Affected Agencies
Includes meetings and coordination work with affected agencies to determine right of way impacts. Does not include obtaining of required permits or cooperative agreements (see WBS 205).
- 185.25.10 Determine Fee and Easement Requirements
- 185.25.15 Prepare Right of Way Requirements Maps
These are project base maps prepared by design with right of way needs identified for submittal to Right of Way Engineering. Does not include work by Right of Way Engineering to prepare right of way appraisal maps (see WBS 220.15.05). This will include incorporation of utility R/W needs determined in activity 200.15.
- 185.25.20 Determine Final Railroad Involvement
Includes preliminary investigations and meetings to determine railroad involvement and right of way impacts. Does not include obtaining of railroad agreements (see WBS 205.15).
- 185.25.25 Determine Water Well Abandonment Needs

End product:

- Maps To Right Of Way

190 Prepare Structures Site Plans

Work involved in the preparation of various structure site plans, including site geometrics, contours, utility locations and other surface and underground obstacles. The end product of this activity is the transmittal of structure site plans to the appropriate design unit.

190.10 Prepare Site Plans for Retaining Walls and Non-standard Earth Retention Systems

190.10

This activity includes all the tasks involved in assembling necessary data, such as foundation studies, etc., for retaining walls and nonstandard earth retention systems. This activity also includes completing the Bridge Site Submittal Form for Retaining Walls and Non Standard Earth Retention Systems and preparing necessary site plan sheets. In addition to the requested information, any special circumstance or important information should be noted and included.

Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Submittal Form for Retaining Walls
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

End product:

Submittal of the site plans to Division of Structures.

190.15 Prepare Site Plans for Soundwalls on Retaining Systems or Structures

190.15

This activity includes filling out the Retaining Wall Site Data Submittal form and attach all required background information with the form. This activity also includes preparing the necessary site plan sheets to be included in the package. In addition to the requested information, any special circumstance or important information should be noted and included.

NOTE: Sound wall specifics are developed under activity 185.20.30, “Prepare Soundwall Design Report”.

Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Request form

- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

End product:

Submittal of the site plans to Division of Structures.

190.20 Prepare Site Plans for Pumping Plants**190.20**

This activity includes assembling the necessary information as outlined in Section 3-3.2 Bridge Site Maps of the Drafting and Plans Manual. Additional information are needed for pumping plants as follow:

- proposed location of the pump house and storage box
- location of the pump outfall line
- location and elevation of the lowest edge of pavement

In addition to the requested information, any special circumstance or important information should be noted and included.

Sub Tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Request form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

End product:

Submittal of the site plans to Division of Structures and will be forwarded to Electrical and Mechanical Branch for final design of pumping plant.

190.25 Prepare Site Plans for Special-Design Culverts**190.25**

This activity includes completion of the Bridge Site Data Submittal Form and attaching all required background information with the form. This activity also includes preparing all necessary site plan sheets to be included in the package. In addition to the requested information, any special circumstance or important information should be noted and be included.

Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Data Submittal form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

End Product:

Submittal of the site plans to the Division of Structures.

190.30 Prepare Site Plans for Bridges and Structures**190.30**

This activity includes completion of the Bridge Site Data Submittal form and attaching all required background information with the form. In addition to the requested information, any special circumstance or important information should be noted and be included.

Sub-tasks:

- Collect and calculate required information
- Prepare site plan drawings
- Prepare Bridge Site Data Submittal form
- Complete, when necessary, the “special circumstance/important information” section of the bridge site submittal form.

End Product:

Submittal of the site plans to the Division of Structures.

200 Coordinate Utilities

Work involved in the identification and incorporation of proposed and /or existing utility installations that is necessary to certify Right of Way. Includes coordination with utility companies, review of utility plans, and Utility Agreements. The final products of this activity are Notices to Relocate and Certification (relative to utilities) of Right of Way. State development of PS&E's for both new utility facilities and the relocation of existing impacted utilities will be performed as part of activity 230, "Prepare Draft PS&E".

NOTE: State efforts in support of the physical relocation (construction) of impacted utilities will be included as part of activities 270 or 300. Activity 270 will ONLY be scheduled or charged if the relocation is made a part of the project's construction contract (item or CCO work).

200.05 Perform Preliminary Utility Verification

200.05

Review of previous effort developed during the PID and environmental process, as well as any additional effort (typically limited to field review, As-Built search and preliminary meetings with the utility companies) required to determine preliminary utility locations.

Sub-tasks:

- Developing preliminary existing utility plans, preliminary meetings, permit review, and sending the plans to the pertinent utility companies for verification.
- Inspect Utility Facilities. Includes Field Review
- Review Project Data (Project Reports, etc.). Includes Initial Utility File Setup

End product:

- Preliminary utility location verification.

200.10 Determine Utility Locations and Prepare Conflict Maps

200.10

Includes preparing, exchanging and verifying conflict plans. This activity also includes determining utility conflict resolution strategies. This activity also includes obtaining and administering contractors for utility potholing

Sub-tasks:

- 200.10.05 Prepare Notices and Obtain Agreements for Potholing - Includes preparing agreements/contracts with the utility companies and contractors for potholing and utility surveys.
- 200.10.10 Perform Potholing - Includes administration of the potholing contract.

- 200.10.15 Perform Utility Surveys
- 200.10.20 Review for Conflicts after Utility Surveys
- 200.10.25 Prepare Utility Conflict Maps - Includes internal review and redesign to avoid relocation. Includes transmittal of plans to the utility companies.

End product:

Utility conflict maps.

Determine relocation strategies.

200.15 Utility Conflict Resolution**200.15**

Includes review of conceptual utility relocation plans from utility company. This includes determination and obtaining the utility encroachment exceptions. Includes determination of utility R/W needs to be incorporated in WBS 185.25.15. Also includes obtaining exceptions to high-low risk policy. Includes identification of right of way requirements required to complete utility relocations. Includes transmittal of needs to project development and right of way.

Sub-tasks:

None identified.

End product:

R/W requirements & determination of the resolution strategies.

200.20 Prepare Utility Relocation Plan**200.20**

Effort in preparing Liability/FHWA Authorization Package and notifying utilities owners of relocation requirements.

Sub-tasks:

- 200.20.05 Prepare Liability/FHWA Authorization Package - Includes obtaining Relocation Plans from Utility Companies determining liability, preparing Utility Agreements, and preparing Report on Investigation (ROI), and processing owners claims.
- 200.20.10 Review & Approve Liability/ FHWA Authorization Package
- 200.20.15 Transmit Notice/Agreement/Permit to Utility Owner
- 200.20.20 Prepare Utility Clearance Letter for R/W Certification

End product:

Approved Relocation Agreements, and utility clearance letter required for right of way certification.

205 Obtain Permits, Agreements, and Route Adoptions

Work involved in obtaining necessary permits, agreements, or route adoptions needed for project construction.

NOTE: Agreements or permits specific to other level 5 activities are NOT included as part of this work.

205.05 Determine Required Permits

205.05

This activity includes all work, normally prior to approval of the PR and FED, to determine what permits may or may not be required.

NOTE: This does not include coordination with resource agencies covering the scoping and NEPA/404 MOU process covered under activities 150.10.05, 150.20.20, 165.05.10, and 165.15.15

Sub-tasks:

None identified.

End Product:

A list of what specific permits are required and from what agency and/or a memo to file of what permits were considered but not pursued and for what reason.

205.10 Obtain Permits

205.10

All work involved in obtaining permits, including:

- Discussions and negotiations with the permitting agency.
- Preparation of the permit and attachments such as exhibits, maps, etc.
- Obtain funds for any required permit fee.
- Submit permit application.

Sub-tasks:

- 205.10.05 Obtain U.S. Corps of Engineers Permit (404)
- 205.10.10 Obtain U.S. Forest Service Permit
- 205.10.15 Obtain U.S. Coast Guard Permit
- 205.10.20 Obtain Department of Fish & Game Permit (1601/1603)
- 205.10.25 Obtain Coastal Development Permit
- 205.10.30 Obtain Local Agency Concurrence/Permit - Coordination necessary to obtain concurrence from the appropriate local agencies when state highway construction impacts existing local facilities.
- 205.10.40 Obtain Waste Discharge Permit (NPDES)
- 205.10.45 Obtain U.S. Fish and Wildlife Service Approval

- 205.10.50 Obtain Regional Water Quality Control Board Permit (401)
- 205.10.95 Obtain “Other” Permits
Includes all permits not listed above, such as Bay Conservation and Development Commission (BCDC) permit, Tahoe Regional Planning Agency (TRPA) permit, and flood control district permits.

End product:

The permits from each applicable permitting agency have been received.

205.15 Obtain Railroad Agreements**205.15**

All work involved in preparing a Railroad Service Contract, a Railroad Construction and Maintenance Agreement, and PUC application.

Sub-tasks:

- 205.15.05 Obtain Plan Approval
- 205.15.10 Prepare Special Provisions and Insurance Clauses
- 205.15.15 Prepare Service Contract for Railroad Services
- 205.15.20 Negotiate and Obtain Construction and Maintenance Agreement
- 205.15.25 Prepare PUC Exhibits and Application

End Product:

Transmittal of a Clearance Memo from the Structures Agreements Section to Office Engineer. Project cannot be advertised prior to this clearance.

205.20 Obtain Freeway Agreements**205.20**

Obtain a Freeway Agreement, superseding Freeway Agreement, Controlled Access Highway Agreement, and/or “Performance” (“Project”) Agreement. Includes preparation, Caltrans and local agency reviews, and revision to the text and map. This task also includes any work done on an agreement for a new public road connection and any work done on a Resolution of Change.

Sub-tasks:

- 205.20.05 Prepare Draft Freeway Agreement
- 205.20.10 Review Draft Freeway Agreement
- 205.20.15 Prepare Final Freeway Agreement
- 205.20.20 Execute Freeway Agreement

End Product:

Executed copies of the Freeway Agreement and map sent to the local agency and filed in the district files.

205.25 Prepare Agreement for Material Sites**205.25**

Prepare and execute agreements for non-commercial borrow and disposal material sites. This includes identifying, obtaining necessary environmental clearance (if any), and preparing a reclamation plan.

Sub-tasks:

- Negotiate material or disposal royalties
- Prepare and review Materials Agreement
- Execute Materials Agreement
- Environmental clearance
- Prepare reclamation plan.

End product:

Copies of the Materials Agreement have been distributed to the appropriate units.

205.30 Prepare and Execute Maintenance Agreement**205.30**

Prepare and execute Maintenance Agreement with local agency.

Sub-tasks:

- Identify facilities within the State's access control limits that will be maintained by the local agency
- Negotiate agreement with local agencies.
- Draft and execute agreement

End product:

Executed Maintenance Agreements

205.35 Prepare and Execute Cooperative Agreement**205.35**

All activities involved in preparation and execution of Cooperative Agreement between Caltrans and a public agency.

Sub-tasks:

See level 7 activity definitions.

End Product:

Executed cooperative agreement.

205.35.05 Prepare and Execute Cooperative Agreement for Environmental Process

All work involved in preparing and obtaining approval of cooperative agreements to begin the environmental process. Includes projects which are 100% State funded, jointly funded, locally funded, local sales tax measure, privately funded, and reimbursed. This task includes cooperative agreements which cover multi-phases which begin with the environmental phase.

Sub-tasks:

- Cooperative Agreement Report, if required.
- Assign a Cooperative Agreement Number
- Prepare draft
- Obtain reviews
- Incorporate changes.
- Prepare transmittal memo.
- Execute Cooperative Agreement.
- Prepare and execute amendments.

End Product:

Approval of the cooperative agreement(s).

205.35.10 Prepare and Execute Cooperative Agreement for Design

All work involved in preparing and obtaining approval of cooperative agreements to begin the design process. Includes projects which are 100% State funded, jointly funded, locally funded, local sales tax measure, privately funded, and reimbursed. This task includes cooperative agreements which cover multi-phases which begin with the design phase. Included in this activity would be Highway Improvement Agreements. (Design - Construction, Design - Right of Way, and Design - Right of Way - Construction)

Sub-tasks:

None Identified.

End Product:

Approval of the cooperative agreement(s) or Highway Improvement Agreements.

205.35.15 Prepare and Execute Cooperative Agreement for Construction

All work involved in preparing and obtaining approval of cooperative-type agreements to be able to begin a construction contract.

Sub-tasks:

- Cooperative Agreement Report
- Cooperative Agreements for Construction and Construction Engineering
- Interagency Agreements
- Joint Power Agreements
- Escrow Agreements
- Contribution Agreements
- Memorandum of Understanding
- Preparation of a Draft Cooperative Agreement
- Review of a Draft Cooperative Agreement
- Preparation and Execution of a Final Cooperative Agreement

End Product:

Approval of all necessary Cooperative Agreement(s) to begin construction.

205.35.20 Prepare and Execute Cooperative Agreement for R/W

All work involved in preparing and obtaining approval of cooperative-type agreements to be able to begin any Right of Way activities.

Sub-tasks:

None Identified.

End Product:

Approval of the Cooperative Agreement(s).

205.40 Obtain Route Adoptions**205.40**

All work involved in preparing the route adoption map, exhibits, the CTC resolution, and route adoption reports for CTC action. Includes:

- New Public Road Connections
- New route adoptions
- Adopted freeway route denominated to a "controlled access highway"
- Traversable Highway Adoption
- Adoption of a temporary connection
- Route Re-designations
- Modifications to an existing adopted route
- Route Rescissions
- Deletion from the Freeway and Expressway System

Sub-tasks:

- 205.40.05 Prepare Route Adoption Map
- 205.40.10 Prepare New Connection Request & Route Adoption for Submittal to CTC
- 205.40.15 Place Route Adoption and Public Road Connection on CTC Agenda

End Product:

Obtain CTC approval

205.45 Obtain MOU from Tribal Employment Rights Office (TERO)**205.45**

Obtain Memorandum of Understanding from either the tribal government or the Tribal Rights Office (TERO) for Native American preference in hiring and for TERO Tax if on a reservation.

Sub-tasks:

None identified.

End product:

None Identified.

205.50 Prepare and Execute Cooperative Agreement for Relinquishment 205.50

Includes all work, on an active capital project that will supersede an existing state highway, in preparing a Relinquishment Agreement/Memorandum of Understanding with the local agency to relinquish existing state facilities and any collateral facilities.

NOTE: All project development effort for relinquished facilities including traffic forecasts, material information, deflection study and PS&E preparation is to be charged to other appropriate WBS activity. For effort in other highway relinquishments, activities should be captured under EA 952137, MSA code R240.

The relinquishment process is covered under WBS 300.25

Sub-tasks:

- Discussions and resolutions of issues with local agency concerning relinquishment features.
- Arrange for special funding, if applicable
- Prepare a cooperative agreement for relinquishment

End product:

Executed Cooperative agreement

210 Prepare Preliminary Structures Design Data

Work involved in gathering/ verifying data needed to begin structures design activities. Sub products of this activity include Structures Preliminary Reports, Foundation Plans, Updated scope of work /estimates for Transportation Related Structures, and Preliminary Geology Reports.

This summary task contains activities for individual structures coded as 210.xx tasks. For a group of miscellaneous structures where work does not need to be tracked on an individual basis, use the task 215.95, in accordance with the section “Rules for Usage of the WBS”, sub-section “Pseudo Activities” on page XX of this Guide.

210.xx Prepare Preliminary Structures Design Data for Structure xx

210.xx

(Where xx is the structure number, e.g. 210.01 for structure 1, 210.02 for structure 2, and so on up to 210.89 for structure 89.)

Work involved in gathering/verifying data needed to begin structures design activities.

Provide for tracking project development “by structure”. Activities for Structure xx for xx =01 (structure number 1) the activity is 210.01; for xx=02 (structure number 2) the activity is 210.02; and so on up to 210.89. Therefore allowing for 89 individual structures to be tracked.

The Structures Project Management Branch Functional Manager and the Structure Design Project Engineer/Structure Liaison/Structure Contract Manager are responsible for assigning each structure a number to correspond with the activity code, therefore ensuring that all staff working on the project EA are charging to the correct structure(s) activity code.

Sub tasks:

- 210.xx.05 Review District Submittal
‘Bridge Site Data Submittal’ – form DS-P0048
- 210.xx.10 Perform Structure Site Investigation
This includes site and topographic survey of structure location used in preparing the preliminary structures report. The subsurface site investigations are performed under activity 215.xx.35
- 210.xx.15 Prepare Preliminary Structure Report
- 210.xx.20 Prepare Draft Foundation Plan
- 210.xx.25 Prepare Preliminary Structures Foundation Report - Based on existing data for the location/vicinity before any field foundation investigation.
- 210.xx.30 Prepare Hydrology Report - Includes hydrology and hydraulics information

End product:

Preliminary Structures Report

Preliminary Structures Foundation Report

Hydrology Report

Draft Foundation Plan

**210.95 Prepare Preliminary Structures Design Data for
“Other” Structures****210.95**

This task and set of sub-tasks mirror task 210.xx, except it is used for a grouping of structures where the work does not need to be tracked on an individual structure basis. See more on the use of this “pseudo activity” in section “Rules for Usage of the WBS” on page 9 of this Guide.

Work involved in gathering/verifying data needed to begin structures design activities.

Sub tasks:

210.95.05 Review District Submittal

‘Bridge Site Data Submittal’ – form DS-P0048

210.95.10 Perform Structure Site Investigation

This includes site and topographic survey of structure location used in preparing the preliminary structures report. The subsurface site investigations are performed under activity 215.xx.35

210.95.15 Prepare Preliminary Structure Report

210.95.20 Prepare Draft Foundation Plan

210.95.25 Prepare Preliminary Structures Foundation Report - Based on existing data for the location/vicinity before any field foundation investigation.

210.95.30 Prepare Hydrology Report - Includes hydrology and hydraulics information

End product:

Preliminary Structures Report

Preliminary Structures Foundation Report

Hydrology Report

Draft Foundation Plan

215 Prepare Structures General Plans

Work involved in the preparation of preliminary plans and related estimates, including structures general plans; and the preparation of Foundation Recommendations and The Log of Test Borings.

NOTE 1: Type Selection Meetings are a part of this activity.

NOTE 2: For seismic retrofit projects, ALL preliminary engineering effort leading to strategy determination is to be included in this activity.

This summary task contains activities for individual structures coded as 215.xx tasks. For a group of miscellaneous structures where work does not need to be tracked on an individual basis, use the 215.95 task, in accordance with the section “Rules for Usage of the WBS”, sub-section “Pseudo Activities” on page 9 of this Guide. Certain activities in this 215 summary task need to be tracked for the overall project and the 215.90 task is provided.

215.xx Prepare Structures General Plans for Structure xx 215.xx

(Where xx is the structure number, e.g. 215.01 for structure 1, 215.02 for structure 2, etc., and so on up to 215.89 for structure 89.)

Provide for tracking project development “by structure”. Activities for Structure xx where xx =01 (structure number 1) the activity number is 215.01; for xx=02 (structure number 2) the activity is 215.02, and so on up to 215.89. This allows for 89 individual structures to be tracked.

The Structures Project Management Branch Functional Manager and the Structure Design Project Engineer/Structure Liaison/Structure Contract Manager are responsible for assigning each structure a number to correspond with the activity code, therefore ensuring that all staff working on the project EA are charging to the correct structure(s) activity code.

Work involved in the preparation of preliminary plans and related estimates, including structures general plans and the preparation of foundation recommendations and “The Log of Test Borings”. Preliminary Plan Approval Process (i.e., Type Selection Meetings, Seismic Retrofit Strategy Meetings, review of Buildings/Culverts/any other miscellaneous details as required) are part of this activity.

Approved preliminary plans are the approved General Plans, and additional preliminary plans for buildings, or any other miscellaneous details as required.

(For all projects, the preliminary engineering effort should be completed prior to type selection or strategy meeting.)

Sub-tasks:

- 215.xx.05 Develop Preliminary Design - This includes
 - Review As-Built Plans and Preliminary Foundation Information
 - Perform Design Field Review.
 - Perform Preliminary Design/ Seismic Analysis
- 215.xx.10 Prepare Preliminary Plan Sheets
- 215.xx.15 Develop Preliminary Quantities
- 215.xx.20 Perform Foundation Field Investigation - This activity mainly includes the sub-surface investigations but may also include site review (i.e., slide investigation).
- 215.xx.25 Prepare Foundation Report and Log of Test Borings - Includes effort required for any subsequent revisions and addenda.

End product:

Approved structure preliminary plans
 Preliminary plan quantities
 Preliminary plan estimates
 Foundation report
 Log of test borings for each structure

215.90 Prepare Structure General Plans for “Overall” Project 215.90

Sub-activities listed for 215.90 are only tracked on an overall project basis and not by structure.

Sub-tasks:

- 215.90.05 Develop Preliminary Estimates
- 215.90.10 Approve Preliminary Plans (Type Selection/Strategy Mtg.) - This activity includes:
 - Update structures general plan sheet(s). May include aesthetics evaluation
 - Delineate structures general plan(s). This activity occurs after Type Selection approval or Retrofit Strategy approval and results in the approved structure general plan. Update preliminary plan sheets developed in activity 215.xx.10.
 - Develop quantities. This occurs after Type Selection approval or Retrofit Strategy approval. Update the preliminary quantities developed in activity 215.xx.15.
 - Develop structures general plan cost estimate. This occurs after Type Selection approval or Retrofit Strategy approval. Update the preliminary general plan estimates developed in activity 215.xx.20.

End product:

- Preliminary Estimates
- Approved Preliminary Plans

215.95 Prepare Structures General Plans for “Other” Structures**215.95**

This task and set of sub-tasks mirror task 215.xx, except it is used for a grouping of structures where the work does not need to be tracked on an individual structure basis. See more on the use of this “pseudo activity” in the section “Rules for Usage of the WBS” on page 9 of this Guide.

An example of use of 215.95 would be doing minor work to an existing culvert, adding a bridge-mounted sign to an existing bridge, pedestals or shafts for an overhead sign, adding pedestals to existing bridge rail for light/sign/CCTV posts, etc., if the Structure Project Engineer and the Structure Project Management Branch decide that it is not necessary to track those activities individually.

In general, this task is for work involved in the preparation of preliminary plans and related estimates, including structures general plans and the preparation of foundation recommendations and “The Log of Test Borings”. Preliminary Plan Approval Process (i.e., Type Selection Meetings, Seismic Retrofit Strategy Meetings, review of Buildings/Culverts/any other miscellaneous details as required).

Approved preliminary plans are the approved General Plans, and additional preliminary plans for buildings, or any other miscellaneous details as required.

(For all projects, the preliminary engineering effort should be completed prior to type selection or strategy meeting.)

Sub-tasks:

- 215.95.05 Develop Preliminary Design - This includes
 - Review As-Built Plans and Preliminary Foundation Information
 - Perform Design Field Review.
 - Perform Preliminary Design/ Seismic Analysis
- 215.95.10 Prepare Preliminary Plan Sheets
- 215.95.15 Develop Preliminary Quantities
- 215.95.20 Perform Foundation Field Investigation - This activity mainly includes the sub-surface investigations but may also include site review (i.e., slide investigation).
- 215.95.25 Prepare Foundation Report and Log of Test Borings - Includes effort required for any subsequent revisions and addenda.

End product:

Approved structure preliminary plans

Preliminary plan quantities

Preliminary plan estimates

Foundation report

Log of test borings for each structure

220 Perform Right of Way Engineering

Work involved in performing Right of Way Engineering work in advance of Appraisal and Acquisition activities. Includes preparing appraisal maps. The Right of Engineering effort required for environmental/hazardous material/paleontology mitigation is addressed under activity 235.

220.05 Retrace and Perpetuate Existing Land Net

220.05

Effort entails work activities required prior to preparation of “land net/retracement map”.

Sub-tasks:

- 220.05.05 Perform Record Data Search - Includes search and acquisition of deeds, title reports and survey maps; analysis of said record data; and preparation of survey request to field search and tie land net monuments
- 220.05.10 Perform Land Net Recovery and Field Ties - Includes field and related survey effort necessary to search, recover, describe, and tie-in existing controlling land survey monuments.
- 220.05.15 Reduce and Adjust Field Tie Data - Includes calculating coordinate locations from land-net tie data or other survey data.
- 220.05.20 Perform Pre-construction Monument Perpetuation Surveys - This activity is required by the Professional Land Surveyors Act and includes preparation of lists of monuments to be perpetuated, referencing land net monuments for perpetuation during construction and field survey activities to effect said perpetuation.
- 220.05.25 Prepare and File Perpetuation Documents - This activity is required by the Professional Land Surveyors Act and involves Corner Records and associated tie notes.

End product:

- Calculated coordinate locations
- Filed Perpetuation Document

220.10 Prepare Land Net Map**220.10**

Effort entails the determination and mapping of existing property boundary locations and calculation of total ownership areas.

Sub-tasks:

- 220.10.05 Analyze Adjusted Field Tie Data - Includes determination of the validity of the field tied points and the plotting of those points.
- 220.10.10 Reconcile Record and Field Tie Data - Includes resolving and coordinating of the land net as defined by found monuments and with property lines established by deed or map.
- 220.10.15 Plot Final Position of Land Net - Includes determination of total ownership areas.
- 220.10.20 Prepare and File Record of Survey Retracement Map

End product:

Land Net/Retracement Map

220.15 Prepare Right of Way Maps**220.15**

Includes all mapping efforts other than for cost estimate maps, land net maps, revisions and record maps. Also includes the certification to the sufficiency of the right of way by designers prior to finalizing the appraisal maps

NOTE: Relinquishment and vacation maps are developed under WBS 205.50.

Sub-tasks:

- 220.15.05 Prepare Appraisal Map - Includes preparation and transmittal of initial map(s) to the appraisal unit excluding hardship or protection parcels. Also includes all calculations required to tie new right of way boundaries to the existing land net and the computation of right of way, excess and remainder areas. Includes attest of R/W sufficiency determination from activity 185.25.15
- 220.15.10 Prepare and File Record of Survey - Includes preparation of the filing of Record of Surveys. Does not include R.O.S filed as Monumentation Map (See WBS activity 300.05).
- 220.15.15 Prepare State or Federal Application Map - Includes mapping for Transfer of Control and Possession agreements and D.O.T. easements.
- 220.15.20 Prepare Federal Participation Map - Includes preparation of maps for FHWA authorization to acquire.
- 220.15.25 Prepare Resolution of Necessity Map - Includes maps for Resolution of Necessity. Also included is any additional mapping for filing a complaint.
- 220.15.30 Prepare Comparable Sales Map

- 220.15.35 Prepare Hardship or Protection Map - Includes preparation of maps used for appraisal of advanced acquisition.
- 220.15.95 Prepare “Other” Maps - (e.g., permit maps)

End product:

Various Right of Way-related Maps

220.20 Prepare Acquisition Document

Includes all property acquisition document preparation work efforts excluding contract obligation transactions.

Sub-tasks:

- 220.20.05 Prepare Legal Description - Includes creation of property description for use in acquisition documents.
- 220.20.10 Prepare Deeds and Ancillary Conveyance Documents - Includes all work other than creation of legal description, related to preparation of deed package transmitted to the acquisition unit.
- 220.20.15 Prepare Resolution of Necessity - Includes description for Resolution of Necessity, and any additional description for filing a complaint.

End product:

Legal Descriptions

Deeds

Resolution of Necessity Legal Descriptions

220.25 Prepare Deeds Package to Fulfill Contract Obligations**220.25**

Effort entails preparation of documents required to convey property rights to satisfy contractual obligations.

Sub-tasks:

- 220.25.05 Prepare Director’s Deed - Director’s Deed prepared for fulfilling contract obligations with other than a utilities entity.
- 220.25.10 Prepare Director’s Deed Plats - Director’s Deed plat prepared for fulfilling contract obligations with other than a utilities entity.
- 220.25.15 Prepare Utility Legal Description and Plat - Legal description and plat prepared for fulfilling contract obligations with other than utilities entity including JUA and CCUA
- 220.25.95 Prepare “Other” Deeds – Includes exchange transactions prepared for fulfilling contract obligations and correctory deeds.

End product:

- Director's Deeds and Plats
- Utility Deeds and Plats
- Other Deeds

220.30 Perform Right of Way Revisions**220.30**

Includes all changes incorporated after submittal of initial appraisal map except changes which involve new ownerships.

Sub-tasks:

- 220.30.05 Perform Revision Initiated by Others - All work required to revise right of way lines, right of way take areas, maps and documents resulting from a requirement not originating within R/W which occurs after the appraisal maps are submitted to the appraiser. If a revision necessitates new ownerships not previously mapped, work required on these new ownerships should be charged to the respective WBS activities 220.05 and 220.20. Also includes revisions to FHWA maps.
- 220.30.10 Perform Revision Initiated by Right of Way. All work required to revise right of way lines, right of way take areas, maps and documents resulting from a requirement originating within R/W which occurs after the appraisal maps are submitted to the appraiser. If a revision necessitates new ownerships not previously mapped, work required on these new ownerships should be charged to the respective WBS activities 220.05 and 220.20. Also includes revisions to FHWA maps.

End Product:

Revised Deeds and/or maps

220.35 Prepare Right of Way Record Map**220.35**

Effort entails the preparation or modification of right of way maps for filing as an official District R/W Record Map.

Sub-tasks:

- 220.35.05 Review Temporary Record Map - Includes effort in completeness/conformance review
- 220.35.10 Delineate Excess Land Parcels - Effort includes identification of excess land parcels.
- 220.35.15 Verify & Post Conveyance Docs - Effort includes verifying title and entry of recording data.
- 220.35.20 Update Status of Excess Land Disposition

End Product:

Record Map

225 Certify Right of Way

Work involved in the acquisition and clearing of Right of Way Parcels needed for Right of Way Certification. The final product of this activity is Right of Way Certification.

225.05 Appraise Right of Way

225.05

All appraisal effort, including hardship and protection.

Sub-tasks:

- 225.05.05 Prepare Hardship and Protection Appraisal - Includes appraisal effort prior to environmental clearance specifically for hardship and protection parcels.
- 225.05.10 Prepare Regular Appraisal - Effort includes appraising real property, minimum value estimates, Special Funded Tax Measure appraisals, and building/ M E & F cost estimator's effort.
- 225.05.15 Review or Revise Contract Appraisal Work - All work involved in reviewing, monitoring, and revising on "contract" appraisals for project parcels.
- 225.05.20 Prepare Miscellaneous Appraisals - Includes effort in appraising miscellaneous items to be acquired by separate R/W Contract or other document. Also includes value estimates for disposal of replenishment housing.
- 225.05.25 Prepare Goodwill Appraisals - Effort in appraising the potential loss of business goodwill for entities affected by project.
- 225.05.30 Prepare Appraisal Revision - Includes effort in reviewing, revising and updating regular appraisals (an "update" is a written response, to a review request, when there is no change in value). Also includes Memorandum of Adjustment and related updates.
- 225.05.35 R/W Appraisal Staking Survey - Survey work required to support appraisal effort.

End Product:

Right of Way Appraisal document

225.10 Acquire Right Of Way**225.10**

All acquisition effort, such as title and escrow activities including hardship and protection.

Sub-tasks:

- 225.10.05 Acquire Hardship and Protection Parcels - Includes acquisition effort prior to environmental clearance specifically for hardship and protection parcels.
- 225.10.10 Obtain Real Property Interests by R/W Contract - Effort in acquisition of real property or interest therein including Special Funded, Tax Measure acquisition. Also includes acquisition to avoid inverse condemnation. Includes negotiations for acquisition of fee interests, railroad parcels, U.S.A. parcels, as well as permanent or temporary easements where there is no fee acquisition. Also includes title and escrow activity.
- 225.10.15 Perform Revised / Miscellaneous Acquisition - Easements, Rights of entries, permits to enter. Includes effort in acquisition of miscellaneous items by R/W Contract or Document, such as mobile homes, leaseholds, sub-ordinate interests, advertising signs, material/disposal agreements and amended R/W Contracts. Also includes construction permits, other permits and/or rights of entry, R/W Contracts to clear month-to-month tenant-owned improvements or equipment, waivers to damage payments under inverse condemnation and conversion of U.S.A. permits to easements, and goodwill when acquired separately.
- 225.10.20 Obtain Resolution of Necessity and Order for Possession - Includes effort in condemnation acquisition: Preparing Resolution of Necessity requests, recording and serving Lis Pendens, serving summons and complaints, Order of Possession.
- 225.10.25 R/W Acquisition Staking Survey - Survey work in support of acquisition effort.

End product:

Right of Way Acquisition documents.

225.15 Relocate Occupants/Personalty, and Clear Right of Way**225.15**

All work involved in relocating occupants of newly acquired property, and clearing right of way after acquisition.

Sub-tasks:

- 225.15.05 Provide Relocation Services and Payments - Includes providing advisory services for eligible and ineligible displaces, processing claims for last resort and non-last resort displaces, scheduling all relocation assistance payments, preparing last resort plans, etc. to relocate people and personal properties from project areas. this include Tax Measure RAP activity.
- 225.15.10 Prepare Replacement Housing Valuations - Includes preparation of initial and revised replacement housing valuation.
- 225.15.15 Sell Improvements - Includes inventorying, advertising, and sale of major buildings and major equipment/machinery.
- 225.15.20 Demolish Improvements - Effort includes preparing, inspecting, and administering demolition contracts. Also includes removal of hazardous material (maybe a separate contract or as part of the comprehensive clearance contract) prior to demolition.

End Product:

Clearance letters from RAP and Demolition sections

225.20 Prepare R/W Certification Documents**225.20**

Effort involved in obtaining clearances, maintaining records and preparing/processing Right of Way Certification for construction project.

Sub-tasks:

None Identified.

End Product:

Right of Way Certification

225.25 Process Federal-Aid Documents

Prepare and transmit FNM-76 to obtain federal funding for R/W appraisal, acquisition, utility relocation, etc.

Sub-tasks:

None identified.

End Product:

Right of Way FNM-76

230 Prepare Draft PS&E

Work involved in the preparation and review of draft roadway plans, specifications and estimates. Includes roadway design and preparation of functional PS&E's. Also includes incorporation of the Draft Structures PS&E into Draft District PS&E.

230.05 Prepare Draft Roadway Plans

230.05

Includes all activities, from the base maps (skeletons), (such as design, delineation, field reviews, and internal/external coordination) (see sub-tasks) necessary to develop draft roadway plan sheets for construction contract.

Sub-tasks:

- 230.05.05 Prepare Title Sheet
- 230.05.10 Prepare Typical Cross Sections
- 230.05.15 Prepare Key Map and Line Index
- 230.05.20 Prepare Roadway Layouts
- 230.05.25 Prepare Profile and Superelevation Sheets
- 230.05.30 Prepare Construction Details
- 230.05.35 Prepare Contour Grading Plans
- 230.05.40 Prepare Summary of Quantities Sheets
- 230.05.45 Prepare Noise Barrier Plans
- 230.05.50 Prepare Retaining Wall Plans
- 230.05.55 Select Standard Plans
- 230.05.60 Prepare Stage Construction and Detour Plans or Traffic Handling Plans

End product:

Roadway Plans for draft PS&E district circulation.

230.10 Prepare Draft Highway Planting Plans

230.10

All activities, (such as design, field reviews, delineation, and internal/external coordination) (see sub-tasks) necessary to develop highway planting plan sheets for construction contract.

Sub-tasks:

- 230.10.05 Prepare Highway Planting Plans
- 230.10.15 Prepare Plant List
- 230.10.20 Prepare Irrigation Plans
- 230.10.30 Prepare Irrigation Quantity Sheets

End product:

Highway Planting Plans for draft PS&E district circulation.

230.15 Prepare Draft Traffic Plans**230.15**

All activities, (such as design, field reviews, delineation, and internal/external coordination) (see sub-tasks) necessary to develop traffic plan sheets for construction contract.

Sub-tasks:

230.15.05 Prepare Signing and Pavement Delineation Plans

230.15.10 Prepare Construction Area Signs Plans

230.15.15 Prepare Traffic Electrical Plans

End product:

Traffic Plans for draft PS&E district circulation

230.20 Prepare Traffic Management Plan**230.20**

Activities necessary to update/develop the project's Traffic Management Plan (TMP).

Sub-tasks:

None Identified.

End Product:

TMP

230.25 Prepare Draft Utility Plans**230.25**

All activities, (such as design, delineation, and internal/external coordination) (see sub-tasks) necessary to develop draft utility plan sheets for construction contract.

Sub-tasks:

230.25.05 Prepare "New Facility" Plans - New utilities required to serve the facilities or new encroachments.

230.25.10 Prepare Utility Relocation Plans - Includes sanitary sewer relocation plans. This includes preparation of the Utility Location Contract Plans. For effort to identify location of existing utilities use WBS 200.05 and 200.10

End product:

Utility Plans for draft PS&E district circulation

230.30 Prepare Draft Drainage Plans**230.30**

All activities, (such as design, delineation, field reviews, and internal/external coordination) (see sub-tasks) necessary to develop draft drainage plan sheets for construction contract.

Sub-tasks:

None Identified.

End product:

Drainage Plans for draft PS&E district circulation.

230.35 Prepare Draft Specifications**230.35**

Activities necessary to develop the project draft Special Provisions.

Sub-tasks:

230.35.05 Develop Roadway Specifications

230.35.10 Develop Highway Planting Specifications

230.35.15 Develop Traffic Specifications - Includes preparation of lane closure charts.

230.35.20 Develop Electrical Specifications

230.35.25 Develop Utility Specifications

230.35.30 Develop Hydraulic Specifications

End product:

Specifications ready for draft District PS&E Circulation

230.40 Prepare Draft PS&E Quantities and Estimates**230.40**

Activities necessary to develop project quantities and estimates.

NOTE: Delineation of Quantity Sheets included in development of plans (WBS 230.05, 230.10, 230.15, 230.25, 230.30.)

Sub-tasks:

230.40.05 Calculate Roadway Quantities and Estimate - Includes preparation of roadway & other cross sections.

230.40.10 Calculate Highway Planting Quantities and Estimate

230.40.15 Calculate Drainage Quantities and Estimate

230.40.20 Calculate Traffic Quantities and Estimate

230.40.25 Calculate Electrical Quantities and Estimate

230.40.30 Calculate Utility Quantities and Estimate - Includes sanitary sewer relocation plans.

End product:

Draft Quantities and Estimates ready for draft District PS&E Circulation

230.55 Incorporate Structures Draft PS&E

230.55

This activity does not include reviewing and commenting on the Draft PS&E which is included in activity 255.05.

Sub-tasks:

None Identified.

End product:

A combined district Draft PS&E package.

235 Mitigate Environmental Impacts and Clean-up Hazardous Waste

Work involved in the identification and mitigation of environmentally sensitive or hazardous waste sites as required to construct a capital outlay project.

235.05 Perform Environmental Mitigation

235.05

All work involved to accomplish environmental mitigation as determined in the environmental document.

Sub-tasks:

See level 7 activity definitions.

End Product:

Completed environmental mitigation according to the environmental document or permit.

235.05.05 Perform Historical Structures Mitigation

All work to move, sell, rehabilitate, or provide landscape buffers for historic structures. Includes historic buildings and historic engineering features such as bridges, roads, trails, canals, and railroads.

Sub-tasks:

- Marketing Plan
- Historic American Building Survey (HABS) recordation
- Historic American Engineering Record (HAER)

End Product:

Completion of all mitigation reported to FHWA, the State Historic Preservation Office (SHPO), and Advisory Council on Historic Preservation (ACHP).

235.05.10 Perform Archaeological and Cultural Mitigation

Consists of archaeological data recovery (Phase III) and other research related to the site's National Register of Historic Places (NRHP) eligibility (excavation, analyses, report preparation, and distribution). This activity is only applicable when an archaeological site is eligible for the National Register of Historic Places for its research potential under Criterion "d". This activity also includes non-excavation work related to the data recovery. Please refer to activity 165.20.60 for "Native American consultation for Phase III Archaeological Study".

Sub-tasks:

- Pre-excavation burial agreement with Native Americans.
- Arrangements for Native American monitors.
- Curation agreement
- Site mapping.
- Right of Entry, if needed.
- Site visit with consultants and Native Americans.
- All field work.
- Analyses of recovered materials.
- Repatriations of human remains and sacred objects, if recovered.
- Preparation, submittal, and review of draft report on excavations
- Publish Phase III final report.
- Transfer collection and field notes and pay fees to curation facility.
- Transmit final report to FHWA, SHPO, ACHP, tribes, and the scientific community and obtain approval letters if required.
- Construction monitoring to ensure no additional effect to the site.
- Establish an Environmental Sensitive Area (ESA) to protect remaining portions of site.

End product:

Published Phase III final report on results of excavation and research

Curated collection

Fulfillment of mitigation requirements.

235.05.15 Perform Biological Mitigation

The design and monitoring of all biological mitigation measures as outlined in the final environmental document and included as a part of the parent project which created the impact. If a separate contract is used for biological mitigation, the effort required to develop that separate project should use the full range of WBS codes.

Sub-tasks:

- Prepare Mitigation Monitoring Plan
- Design and delineation of mitigation measures into project plans.
- Preparation of special provisions
- Reviews by affected units and regulatory agencies,
- Prepare for and conduct construction pre-job meeting to discuss mitigation requirements
- Monitor construction and post construction activities
- Prepare and distribute monitoring reports

End Product:

Fulfillment of biological mitigation requirements

235.05.20 Perform Environmental Mitigation R/W Work

This level 7 activity contains R/W effort not described in Activities 220, and 225 in support of Environmental Mitigation Parcel. It involves Right of Way Engineering, appraisal and acquisition effort connected to a mitigation parcel not covered by earlier activities.

Sub-tasks:

- Engineering of Mitigation parcel
- Appraise Mitigation parcel
- Acquire Mitigation parcel
- Surveys of Mitigation parcel

End product:

Acquired Parcels for Mitigation's

235.05.25 Perform Paleontology Mitigation

All tasks related to the recovery of important paleontological resources affected by the project related activities, contract (or task order) oversight, coordination and monitoring of field work, report review.

NOTE: Preparation and administration of consultant contract or task order is captured under WBS activity 100.20.

Sub-tasks:

- Review and update of Preliminary Paleontological Work Plan to a final Mitigation Plan
- Contract oversight
- Review of consultant-prepared reports on mitigation work.

End product:

Final report on recovery (mitigation) of important paleontological resources and certificate of compliance with mitigation commitments for inclusion in project files.

235.10 Perform Detailed Site Investigation for Hazardous Waste**235.10**

District will perform a detailed site investigation either through development of a task order using the Statewide Hazardous Waste Investigation Contract for the investigation or the development of an investigation work plan by the consultant for the investigation of the hazardous waste site. The investigation should be adequate to fully characterize the contamination and identify appropriate and feasible alternatives for the cleanup of the contamination.

Sub-tasks:

- 235.10.05 Obtain Right or Permit for Hazardous Waste Site Investigations - The District Hazardous Waste Management group is to request by memorandum from District Right of Way a right or permit to enter onto an identified property for the purpose of conducting a hazardous waste site investigation. The HWM group is to supply technical support to R/W for purposes of obtaining the right or permit to enter. Coordinate effort with Legal if necessary. Does not include miscellaneous acquisition by R/W Contracts; e.g. mobile homes, amended contracts, leasehold interests, signboards, waivers, etc. Adequate time should be requested to ensure completion of the detailed site investigation.
- 235.10.10 Perform Surveys to Locate Hazardous Waste Sites - Includes effort to District to determine which HW site identified will require a detailed site investigation.

- 235.10.15 Conduct Detailed Investigation - Includes effort in Develop a Detailed Site Investigation Task Order to use the Statewide Hazardous Waste Contract's consultants to conduct a detailed site investigation and feasibility study or develop a work plan for conducting the detailed investigation. The site investigation will be performed by consultant under the direction and control of the district hazardous waste task order manager.

End product:

A detailed hazardous waste remedial investigation and feasibility report detailing the investigation and outlining the feasible remedial technologies applicable to the particular HW site.

235.15 Develop Hazardous Waste Management Plan

235.15

The remedial investigation and feasibility studies of potential mitigation strategies for the HW site constitute the Hazardous Waste Management Plan. The type and complexity of the HWMP is determined by the Project Manager. A part of the HWMP is the development of the RAD (remedial action design). This is the actual plan necessary for implementing the remediation. The RAD may be prepared during the HW investigation or by the district, depending on the mitigation selected.

Sub-tasks:

- Develop RAD, which may involve task order
- Review RAD and determine scope of HWMP
- Develop HWMP
- Approve HWMP

End product:

Hazardous Waste Management Plan
Remedial Action Design

235.20 Prepare Hazardous Waste PS&E

235.20

The hazardous waste management plan and the associated RAD (remedial action design) requires the development of hazardous waste remediation design plans, specifications and estimates. The PS&E is used by the district to contract for the actual cleanup of the hazardous waste situation. The PS&E can be either completed by the District project development staff with assistance from hazardous waste staff or a task order under the statewide hazardous remedial design contract can be developed by the District for the development of design and PS&E. If a separate contract is used, the effort required to develop that separate project should use the full range of WBS codes.

Sub-tasks:

- Review HWMP
- Determine how the PS & E will be prepared, either by Task Order or in-house
- Consultation with PS & E preparer
- Task Order oversight & administration
- Review PS & E, including reviews by District and HQ functions.

End product:

Remedial action design and PS&E

235.25 Perform Hazardous Waste Clean-up**235.25**

The mitigation (cleanup) will require a contract and PS&E based on the remedial action design. District project development is responsible for the hazard waste cleanup PS&E. District Construction is responsible for administration of the cleanup contract. Cleanup of the site will be completed by contract prior to the transportation project construction. In exceptional cases, cleanup of the HW will be accomplished as part of the construction contract. In these cases, approval of the Chief Engineer is required. The District shall use develop appropriate detailed special provision for inclusion into the PS&E.

NOTE: Clean-up activities are performed by contract either before construction or as part of it.

Sub-tasks:

None identified.

End Product:

Remediation of the contamination and hazardous waste condition.

235.30 Certify Freedom of Hazardous Waste**235.30**

Final review and approval of the Certificate of Sufficiency, including validation of prior site investigation findings either by field inspection or other work as needed. If a proposed acquisition is outside the boundary of previous studies for project or ISA, a more detailed investigation may be needed before acquisition. If prior studies indicate that a situation exists where some actions by the existing owner is required, progress of that action (including tank removal), if any, will be assessed and further recommendations made as needed.

Sub-tasks:

- Review of R/W Certification for consistency with prior project scope.
- Field review of site

- Verification of status of any recommended remediation (tank removal) by owner
- Preparation and approval of the Certificate of Sufficiency for acquisition

End Product:

Completed certificate of sufficiency with any necessary recommendations.

240 Prepare Draft Structures PS&E

Work involved in the development of the final design and preparation of draft structures plans, specifications, and estimate. Includes Foundation Review.

As with summary task 215, Prepare Structures General Plans, this task contains sub-tasks for individual structures with tasks 240.xx, as well as tasks for the overall project with 240.90, and for work done for a grouping of miscellaneous structures with 240.95. See also more information on use of the .95 pseudo activity in the section “Rules for Usage of the WBS” on page 9 of this Guide.

240.xx Prepare Draft Structure PS&E for Structure xx **240.xx**
(Where xx is the structure number, e.g. 240.01 for structure 1, 240.02 for structure 2, etc., up to 240.89 for structure 89.)

Provide for tracking project development “by structure”. Activities for Structure xx for xx = 01 (structure number 1) the activity is 240.01; for xx=02 (structure number 2) the activity is 240.02 and so on up to 240.89, therefore allowing for 89 individual structures to be tracked.

The Structures Project Management Branch Functional Manager and the Structure Design Project Engineer/Structure Liaison/Structure Contract Manager are responsible for assigning each structure a number to correspond with the activity code, therefore ensuring that all staff working on the project EA are charging to the correct structure(s) activity code.

Work involved in the development of the final design and preparation of draft structures plans, specifications, and estimate. Includes Foundation Review (review of design of each foundation of each structure).

Sub-tasks:

See level 7 definitions for more detail.

End Product:

Draft Structures Plans, Specifications & Estimate Package

240.xx.05 Perform Design

The work done by an engineer to produce the original structure design calculations, and to develop information necessary to prepare the unchecked details. This work is primarily done by the structure designer, but support work is also done by support staff such as other engineers (including specialists), architects, etc.

Sub-tasks:

- Perform Structures Design Calculations
- Develop Unchecked Details

- Delineate Structures Unchecked Details (This activity for delineation by design engineer. For delineation by detailers of unchecked details and unchecked plan sheets see activity 240.xx.10)

End Product:

Complete analysis

Design Notes

Sketches (that are used to prepare plan sheets)

240.xx.10 Prepare Plan Sheets

The work performed by the structural technicians to prepare the unchecked plan sheets.

Sub-tasks:

None Identified.

End Product:

Unchecked Structural Plan Sheets

240.xx.15 Check Design and Plan Sheets

An engineer (different than the engineer who did the original design) checks a set of the unchecked plan sheets and performs an independent structure analysis.

Redesign charged to 240.xx.05 and detailing to 240.xx.10.

Sub-tasks:

- Perform Structures Design Check (independent check by a design engineer other than the design engineer who did the original design calculations (see 240.xx.05))
- Review Checked Details
- Delineate Structures Checked Details (updating details on structure plan sheets as a result of revisions and plan comments that occurred after distribution of unchecked plans)

End Product:

Checked Structure Plan Sheets

240.xx.20 Prepare Quantities

Quantities calculated by structure design staff for the P&Q package.

Sub-tasks:

None identified

End Product:

Quantity calculations for all items of structure work.

240.90 Prepare Draft Structures PS&E for “Overall” Project**240.90**

Work involved in the development of the final design and preparation of the overall project’s plans, specifications, and estimate. Activities under this task are tracked on an overall project basis and not by structure.

240.90.05 Distribute and Review Unchecked Plans

Distribution of the Unchecked Structure Plans for review, with comments regarding design, detailing, constructability, etc. to be returned to the structure design engineer. The returned comments are collected by the structure design engineer for consideration of updating/revising the plans to produce the checked details/checked plan sheets, plans distributed in accordance to OSD policy.

Sub-tasks:

None identified

End Product:

Consolidated comments regarding the contract plans for completeness and constructability.

240.90.10 Distribute and Review Checked Plan Sheets

Distribution of the checked plan sheets for review and comment if minor revisions are still requested or if something was missed in the review of the unchecked details.

Sub-tasks:

None identified

End Product :

Distribution of checked plans complete

Comments returned to Designer

240.90.15 Perform Foundation Review

Foundation review by Office of Structure Foundations (OSF) staff to review the design of foundations. Also OSF review of plans and foundations recommendations to ensure conformity.

Sub-tasks:

None Identified.

End Product:

Concurrence by OSF that foundation recommendations have been properly incorporated into the project.

240.90.20 Prepare Draft Specifications

Prepare Draft Specifications by the Structures Specifications section of the Structures Specifications & Estimating Branch using the Checked Plans and the item list.

Sub-tasks:

None Identified.

End Product:

Set of Draft Specifications to be part of the Draft Structures PS&E package.

240.90.25 Prepare Estimate

Prepare Structures Estimate working days/BEES by the Structures Estimating section of the Structures Specifications & Estimating Branch using the Checked Plans and the quantity calculations.

Sub-tasks:

None Identified.

End Product:

Draft Marginal Estimate/working days to be part of the Draft Structures PS&E package.

240.90.30 Review Draft Plans, Specifications, and Estimate

Includes all functional reviews of the Structures Draft Plans, Specifications & Estimate. District review of structures draft PS&E is included in WBS activity 255.05.

Sub-tasks:

- Address Specification & Estimate comments
- Delineate Draft Structures PS&E
(delineation due to any comments made by the Structure Specifications & Estimating Branch that require revisions to the plans).

End Product:

Draft Structures PS&E package.

240.95 Prepare Draft Structure PS&E for “Other” Structures**240.95**

In accord with the rules for use of a pseudo activity, the Structure Project Engineer can group miscellaneous structures and report on work for the group using this series of tasks. See section “Rules for Usage of the WBS” on page 9 of this Guide for more information on use of this pseudo activity.

For example, 240.95 might include doing minor work to an existing culvert, adding a bridge-mounted sign to an existing bridge, pedestals or shafts for an overhead sign, adding pedestals to existing bridge rails for light/sign/CCTV posts, etc., if the Structure Project Engineer and the Structure Project Management Branch decide that it is not necessary to track such work individually.

240.95.05 Perform Design

The work done by an engineer to produce the original structure design calculations, and to develop information necessary to prepare the unchecked details. This work is primarily done by the structure designer, but support work is also done by support staff such as other engineers (including specialists), architects, etc.

Sub-tasks:

- Perform Structures Design Calculations
- Develop Unchecked Details
- Delineate Structures Unchecked Details (This activity for delineation by design engineer. For delineation by detailers of unchecked details and unchecked plan sheets see activity 240.95.10)

End Product:

Complete analysis

Design Notes

Sketches (that are used to prepare plan sheets)

240.95.10 Prepare Plan Sheets

The work performed by the structural technicians to prepare the unchecked plan sheets.

Sub-tasks:

None Identified.

End Product:

Unchecked Structural Plan Sheets

240.95.15 Check Design and Plan Sheets

An engineer (different than the engineer who did the original design) checks a set of the unchecked plan sheets and performs an independent structure analysis.

Redesign charged to 240.95.05 and detailing to 240.95.10.

Sub-tasks:

- Perform Structures Design Check (independent check by a design engineer other than the design engineer who did the original design calculations (see 240.95.05))
- Review Checked Details
- Delineate Structures Checked Details (updating details on structure plan sheets as a result of revisions and plan comments that occurred after distribution of unchecked plans)

End Product:

Checked Structure Plan Sheets

240.95.20 Prepare Quantities

Quantities calculated by structure design staff for the P&Q package.

Sub-tasks:

None identified

End Product:

Quantity calculations for all items of structure work.

250 Prepare Final Structures PS&E Package

Work involved in addressing District's comments on the Draft Structures PS&E and incorporating them into the final structures package. Also, incorporates any OOE comments on the final structure PS&E package (review package with unsigned, reduced prints) into final structures PS&E EXPEDITE package.

250.05 Incorporate District Comments into Structures PS&E

250.05

District comments on the Draft Structures PS&E package are received, reviewed and incorporated into the Structure Plans, Specifications and Estimate for the Final Structures PS&E package.

Sub-tasks:

None Identified.

End Product:

Incorporated District comments into Structure Plans, Specifications and Estimate for the Final Structure PS&E package.

250.10 Finalize Structures PS&E Package

250.10

Finalize Structures PS&E package. Forward copies of Final Structures PS&E package to the District (to be combined by the District with the Final District PS&E package [see activity 255.20] and to the ESC Office of Office Engineer (OOE) for the OOE's review of and return of comments on the Final Structure PS&E package (OOE's review time is charged to activity 260.15.05). Put together and forward Structure PS&E EXPEDITE package to OOE when District is ready to forward the Final PS&E EXPEDITE package to OOE. This activity also includes the effort required to update the package when OOE requires a structures PS&E resubmittal.

Sub-tasks:

Any additional design revisions to Structures Plans

Review and incorporate OOE comments into Final Structures PS&E package

Any additional delineation for Final Structures PS&E package due to OOE comments

End Product:

- Final Structure PS&E package (for review with unsigned reduced plans) to OOE.
- Final Structures PS&E EXPEDITE package with signed full-size plans, updated BEES, working day statement, copy of railroad insurance form (if required), copies of all structure foundation data to be sent to OOE to be

combined and reviewed together with the Final District PS&E EXPEDITE package.

255 Circulate, Review, and Prepare Final District PS&E Package

Work involved in the circulation and review of the Draft District PS&E package. Includes addressing review comments and preparing the Final District PS&E package.

255.05 Circulate & Review Draft District PS&E Package

255.05

This activity includes reproduction, distribution, coordination, circulation of the project's plans, specifications and estimate . This activity also includes the review and, comment as well as reaching consensus with the reviewers. Copies of review package are routed to both in-house functional branches and involved outside agencies.

Sub Tasks:

- Review Final Plans for Constructability
- Review Project for Final Permit Needs
- Review Aesthetics
- Review All Specifications and Estimate
- Review Geotechnical Design Elements and specifications
- Perform Safety Review
- Perform All Other PS&E Reviews

End product:

Collection and documentation resolution of all comments, so that the draft plans, specifications and estimate can be finalized.

255.10 Update PS&E Package

255.10

This activity includes all necessary updates as a result of the draft PS&E circulation or when headquarters Office of the Office Engineer (OOE) requires resubmittal of the final PS&E package from the district. This includes delineation support

Sub-tasks:

- 255.10.05 Update Roadway PS&E
- 255.10.10 Update Highway Planting PS&E
- 255.10.15 Update Traffic PS&E
- 255.10.20 Update Hydraulic PS&E
- 255.10.25 Update Technical Reports - Such as Geotechnical Report, Hydrology/Hydraulics Report, and Material Report
- 255.10.30 Update Utility PS&E
- 255.10.35 Update Electrical PS&E

End product:

Updated set of plans, specifications and estimate ready for final process review prior to being transmitted to Headquarters Office Engineer.

255.15 Perform Environmental Reevaluation**255.15**

This activity is initiated when changes have occurred during design that may increase the project foot print or increase the environmental impacts above that addressed in the final environmental document. This activity also includes updates required because EDs are only valid for three years. If a supplemental document is required the WBS activity 165 should be used.

NOTE: FED's are only valid for three years, consequently this activity may be required more than once.

Sub-tasks:

- Technical studies that may be required to assess the new impacts. This would include but not limited to: biological, archaeological, visual and noise studies.
- Drafting review and approval of the reevaluation.

End Product:

An approved Environmental Reevaluation for the final PS&E package or a determination that no Reevaluation is required.

255.20 Prepare Final District PS&E Package**255.20**

This activity includes all the tasks required to complete the process requirements (such as the reproduction, funds request and Attachment A). Also includes OE effort to ensure the completeness, quality, and consistency of PS&E's submitted to the headquarters Office of Office Engineer (OOE) for processing. The DOE verifies that the design is complete, bid-able, and build-able.

Sub-tasks:

- 255.20.05 Review Plans for Drafting Standards Compliance - This includes the delineation effort required to address any review comments.
- 255.20.10 Incorporate Final Structures Specifications and Estimate into Final District PS&E
- 255.20.15 Prepare Request for Funds

End Product:

Submittal of the plans, specification, and estimate to the Office of Office Engineer (OOE).

255.25 Prepare Geotechnical Information Handout**255.25**

This activity includes reviewing the Geotechnical Design Report (GDR) that was prepared earlier during the design phase and selecting the necessary sections to be included in the Geotechnical Information Handout. The GDR includes information such as existing physical setting, geophysical studies, geotechnical conditions, geotechnical analysis and design, construction considerations, and recommendations and specifications.

Sub-tasks:

None Identified

End Product:

Completion of the Geotechnical Information Handout, and making it available for the prospective bidders to review.

255.30 Prepare Materials Information Handout**255.30**

The Materials Information Handout (MIH) is prepared for the use of prospective bidders. The handout includes test data on local materials sources, soil survey sheets showing borings, tests, and seismic information (if required). It also includes a statement that the non-commercial borrow, disposal, or material sites conform with regulations and environmental laws.

Sub-tasks:

- Transmit project strip map and proposed typical cross sections to the Materials Unit requesting available materials information for the project.
- Request the Materials Unit to prepare a Materials Information Handout.
- Material Unit prepares MIH and sends to Project Engineer.

End Product:

Completion of the Material Information Handout, and making it available for the prospective bidders to review.

260 Prepare Contract Documents

Work involved in the preparation of contract bid documents. Completion of this activity is the milestone "Ready to List"

260.10 Produce Check Prints

260.10

Process, plot and distribute check prints for PS&E review and processing of draft contract documents.

NOTE: This activity is most often charged with EA 910943, and is generally not scheduled and resourced on a project specific basis.

Sub-tasks:

- Log plans in
- Plot required number of plan sets
- Evaluate plans for conformance to drafting standards.
- Distribute check plots to Plans Bin, FHWA and others as appropriate.

End Product:

Check prints

260.15 Prepare Draft Contract Documents

260.15

This Activity includes all engineering work performed by the Office of Office Engineer (OOE) to prepare and process draft District PS&E submittals to draft contract (PS&E Ready). This activity also includes the effort the district or structures requires to incorporate OOE comments. When the districts or structures are required to resubmit the PS&E, that effort should be captured under WBS activity 255.10 or 250.10 respectively.

Sub-tasks:

See level 7 activity definitions

End Product:

Draft Contract (PS&E Ready)

260.15.05 Verify PS&E is Complete and Conforms to Department Policies and Standards

This Activity includes engineering work performed by the OOE to prepare and process draft District PS&E submittal (includes Structures PS&E) into draft contract in conformance with Caltrans and/or FHWA policies, standards and applicable laws and regulations.

Sub-tasks:

- Verify the plans are complete and conform to Caltrans standards and policy.
- Verify contract special provisions cover all items of work and other contract terms in accordance with Caltrans and/or FHWA standards and applicable laws and regulations.
- Verify Engineer's Estimate is consistent with the plans and special provisions and that there is a method of payment for all contract work either by contract item or some other means (e.g. included in other items of work, extra work, etc.)
- Develop a punch list of non-conforming and unresolved issues and forward to District/Structures for resolution.

End Product:

Draft contract

260.15.10 Incorporate District Revisions

This activity includes engineering work required to be performed by the District and/or Structures to resolve issues and make revisions as requested by OOE in Activity 260.15.05. It also includes effort by OOE to update draft contract documents and to incorporate revisions submitted by the District /Structures.

Sub-tasks:

- Resolve issues and make revisions to PS&E.
- Verify that all requested information has been provided by the District /Structures.
- Verify that District /Structures revisions are in accordance with Caltrans and/or FHWA standards and applicable laws and regulations.
- Verify that District /Structures revisions are not in conflict with other portions of the PS&E.
- Update draft contract to incorporate revisions.
- Verify FHWA comments have been appropriately addressed.

End Product:

Draft contract that is PS&E ready (i.e. all engineering work is complete)

260.20 Prepare Project for Advertising**260.20**

This Activity includes all work required to prepare final contract plans, specifications and estimates for advertisement. This includes effort to verify project is cleared for advertising.

NOTE: This Activity is charged to a specific project EA, and to EA 910943. The effort charged to 910943 is generally not scheduled and resourced on a project specific basis.

Sub-tasks:

For more detail see level 7 activity definitions.

End Product:

Final Contract Bid Documents

260.20.05 Final Plan Preparation

This Activity includes work required to prepare final contract plans for advertisement and certify the final Engineer's Estimate and total PS&E estimate.

Sub-tasks:

- Complete and prepare draft redline contract plans for delineation
- Verify that redline plans have been completely and accurately delineated
- Verify all items of work have a method of payment
- Verify that funds have been identified for all contract costs
- Certify final Engineer's Estimate

End Product:

Final Contract Plans

260.20.10 Update Contract Documents

Final contract preparation activities to incorporate latest standards, DBE goals, project scheduling information and address comments developed during final plan preparation process.

Sub-tasks:

None identified.

End Product:

Final Contract documents ready for typing

260.20.15 Develop MBE/WBE/DVBE/DBE Match List and Set Goals

This Activity includes all work associated with analyzing contract work and setting MBE/WBE/DVBE or DBE project participation goals for Caltrans construction contracts.

NOTE: This activity is charged to EA 910943.

Sub-tasks:

- Compare the items of work and materials that can be handled by available MBE/WBE/DVBE or DBE firms in the vicinity of the project and develop match list.
- Determine items of work and materials that will most likely be performed by the prime.
- Estimate the percentage of work available that MBE/WBE/DVBE or DBE can perform
- Set project participation goals based on analysis.

End Product:

MBE/WBE/DVBE/DBE goals

260.20.20 Perform Fund Analysis and Finalize BEES

This activity includes updating the BEES at bid opening and performing analysis of funding requirements for each project after the bids are opened.

NOTE: This activity is charged to EA 910943.

Sub-tasks:

- Update the BEES to reflect redline changes in engineer's estimate.
- Initialize the bid opening system.
- Distribute the Final Estimate of Cost.
- Analyze the funding requirements for each project.
- Setup the phase 4 EA

End Product:

- Final Estimate of Cost
- Phase 4 EA
- Funding analysis work sheet

260.20.25 Prepare Final Specifications and Proposal and Contract Documents

This activity includes all work required to produce the final electronic (typed) contract Special Provisions and Proposal and Contract books ready for reproduction.

NOTE: This activity is charged to a specific project EA

Sub-tasks:

- Incorporate contract boilerplate
- Generate and incorporate electronic Engineer's Estimate
- Scan and incorporate Engineer's seals
- Merge project data
- Format for reproduction

End Product:

Contract bid document which consists of contract Special Provisions and Contract & Proposal Books

260.20.30 Reproduce Contract Documents

Compile final contract Special Provisions and Proposal and Contract book, Materials Information handouts, and contract plans; develop reproduction orders and submit to Reprographics for publication.

NOTE: This work is charged to a specific project EA

Sub-tasks:

None identified.

End Product:

Final master copy of Special Provisions and Proposal and Contract book, Materials Information Handouts, and contract plans ready for reproduction

260.20.35 Delineate Plans

Perform final drafting work on project plans to incorporate agreed upon changes and updating prior to final plotting and preparation for advertisement distribution printing.

NOTE: This activity is charged to a specific project EA

Sub-tasks:

- Maintain OE Database of project inventory through login and logout records.
- Import electronic plan files or retrieve hard copy plans.
- Scan and vectorize hard copy plans to create electronic file.
- Draft redline changes as directed by engineering staff.
- Plot final electronic files.
- Check final drafted changes prior to final printing.
- Send to Reprographics.

End Product:

Final approved project plans

265 Advertise, Open Bids, Award and Approve Contract

Work involved in the advertisement, bid opening, award, and approval of a construction

265.10 Advertise Project

265.10

Compiling and advertising projects which are Ready To List (RTL) and are funded.

NOTE: The work involved in this activity is charged to EA 910943, and is generally not resourced on a project specific basis.

Sub-tasks:

See Level 7 task descriptions.

End Product:

Advertisement in the State Register and Newspapers and Trades publications

265.10.05 Schedule Project for Advertising

Involves all work in identifying projects which are Ready To List (RTL) and have funding to be advertised and scheduling them for advertising.

Sub-tasks:

- Prepare tentative advertisement list of projects
- Distribute the above list to other units for their input and concurrence
- Finalize advertisement list and set bid opening dates
- Produce ads for bids and advertisement list
- Set target milestone to be met by other units prior to advertisement

End Product:

- Advertising schedules
- Milestone deadlines
- Advertisements for bids

265.10.10 Advertise Project - State Contracts Register

This activity consists of placing advertising for upcoming Caltrans construction contracts in the State Contracts Register.

Sub-tasks:

- Determine bid opening schedule of upcoming construction projects and establish conforming advertising schedules.

- Arrange for the placement of advertisements in the Contracts Register according to the appropriate advertising schedules.

End Product:

Project advertisements in State Register

265.10.15 Advertise Project - Newspapers

This activity consists of placing advertising for upcoming Caltrans construction contracts in community newspapers and construction trade papers.

Sub-tasks:

- Determine bid opening schedule of upcoming construction projects and establish conforming advertising schedules.
- Arrange for placement of advertisements in publications according to appropriate advertising schedules.

End Product:

Project advertisements

265.15 Distribute Bid Documents**265.15**

This activity involves storing, managing and distributing Contract & Proposal books, Special Provisions books, Contract plans, material information handout, geotechnical information handout, bidders lists and permits for advertised highway construction projects.

NOTE: This Activity is charged to EA 910943, and is generally not resourced on a project specific basis.

Sub-tasks:

None identified.

End Product:

- Distribution of Bid Documents.
- Bidders Lists

265.20 Develop and Issue Addenda**265.20**

This activity involves developing, publishing and issuing addenda to advertised projects.

NOTE: This Activity is charged to the project EA and/or EA 910943, and will generally not be scheduled or resourced.

Sub-tasks:

- Develop addenda (develop revised contract special provisions, Engineer's Estimate and red line plan sheet corrections). This includes all effort including district and ESC effort.
- Delineate line plan sheet corrections for addendum
- Publish and reproduce addendum
- Distribute addendum to all bidders, non-bidders, clearing houses, builders exchanges, Districts, Functional Programs, FHWA and other involved parties. OSD design sections or all those who "sealed" plans need to be included in distribution list.
- Verify receipt of addenda by all bidders
- Post addenda in undistributed contract documents

End Product:

Changes required in bid documents in final form.

265.25 Respond to Inquiries & Open Bids**265.25**

This activity includes all work associated with opening, reading, recording and verifying bids on Caltrans Construction contracts, as well as disseminating bid results to the Department and the public. Work to respond to bidders inquiries after advertisement is included in this activity.

NOTE: HQ OOE effort is charged to EA 910943, but is generally not resourced.

Sub-tasks:

- Opening bids at public bid opening, recording bid results and cursory check for responsiveness and completeness of bid.
- Reading and recording of bids
- Entry of bid data into Caltrans Bid Opening System to verify each bid and to store bid data on computer.
- Respond to Bidder Inquiries.
- Provide copies of cross sections/as-builts to bidders upon request

End Product:

Opened bids

Disseminated bid information

265.30 Award Contract

265.30

This activity includes all contract award-related work.

NOTE: Work for this activity is charged to the project specific EA or EA 910943 and is generally not resourced.

Sub-tasks:

For more detail see level 7 activity definitions.

End Product:

Contract Award Packages

265.30.05 Evaluate MBE/WBE/DVBE/DBE Goal, Good Faith Effort, and Hearings

This work consists of processing the project contract minority goal attainment as certified by the Business Enterprise Program. If the responsible low bidder is not certified as making a good faith effort, then an appeal meeting is arranged for and conducted by Office Engineer. A recommendation is prepared by OE based on the hearing panel's conclusions and approval sought from the Chief Engineer/Director/BT&HA.

NOTE: This activity is to specific project EA (Hearings) or EA 910943.

Sub-tasks:

- Process BEP certifications/non certifications.
- Arrange appeal meetings for “no good faith efforts”.
- Hold appeal meetings.
- Prepare Panel recommendations.
- Obtain recommendation approvals.
- Notify appealing contractor of the results.
- Prepare for court appeal by contractor.
- Maintain records of appeals.

End Product:

Approved minority goal attainment or good faith effort determination.

265.30.10 Resolve Bid Award Issues and Hearings

This work consists of addressing protests by contractors about bid results.

NOTE: This activity is to specific project EA (Hearings) or EA 910943, and is generally not resource loaded.

Sub-tasks:

- Analyzing protests and evaluate in conjunction with bid results.
- Respond to protest- deny protest validity.
- Arrange for protest meeting if some validity in protest.
- Hold protest meeting.
- Prepare protest panel recommendations.
- Obtain recommendation approvals.
- Notify protesting contractor of the results.
- Prepare for court appeal by contractor.
- Maintain records of protests.

End Product:

Approved recommendations.

265.30.15 Prepare, Process, and Award Contract

This activity includes all routine contract award-related work.

NOTE: Work for this activity is charged to EA 910943 and is generally not resource loaded.

Sub-tasks:

- Perform license, small business certification, bid bond checks
- Process G-11/G-12; perform fund analysis, obtain EA certification
- Assemble award packages and award contracts
- Recommend award of contract
- Award contract

End Product:

Awarded Contracts

265.35 Execute and Approve Contract

265.35

This activity includes all work associated with the execution of awarded contracts and the approval of those contracts.

NOTE: Work performed for this activity is charged to EA 910943. and is generally not resource loaded.

Sub-tasks:

- Contract award package shipped to contractor.
- Contractor signs contract, attaches payment and performance bonds and returns executed contract.
- Office Engineer receives executed contract, checks to determine if properly executed.
- Office Engineer signs contract
- Legal signs contract - contract is approved

End Product:

Approved Contract

270 Perform Construction Engineering and General Contract Administration

Work involved in field engineering, construction surveys, inspection of contractors' operations, sampling and testing of materials, and general construction contract administration. The end product of this activity is the recommendation for Contract Acceptance by the Resident Engineer

270.05 Prepare Resident Engineer's File

270.05

Work involved in preparing the District RE File / Structures R.E. Pending File. Includes contacts with construction to transmit the file and determine what additional information may be required. Includes preparing and forwarding additional information (such as cross sections/as-builts/slope staking notes/grid grades/structures 4-scales) as requested by construction.

Sub-tasks:

None identified.

End Product:

District RE File and Structures R.E. Pending File forwarded to construction/surveys.

270.10 Prepare Staking Notes

270.10

Effort in developing construction Staking Notes and construction Staking Electronic Data Files from design information.

Sub-tasks:

None identified.

End product:

- Construction Staking Notes
- Construction Staking Electronic Data Files

270.15 Perform Construction Staking**270.15**

Construction staking operations performed at the construction project site. Surveys time reviewing the survey staking request, traveling to the construction project, performing the staking and all staking related survey operations.

Sub-tasks:

- 270.15.05 Perform Initial Staking
- 270.15.10 Perform Re-staking

End product:

- Construction staking to control planned lines and grades
- Notes resulting from construction staking

270.20 Perform Construction Engineering Work**270.20**

See Sub tasks below

Sub-tasks:

- 270.20.05 Review Resident Engineer's File - Includes Structures R.E. Pending File.
- 270.20.10 Review Project Plans, Special Provisions, and Estimate
- 270.20.15 Determine Contract Pay Quantities - Work involved in measuring and calculating the contract item pay quantities for the construction project. Includes preparation of payment sheets to be used for quantity sheets.
- 270.20.20 Determine Lines and Grades Control - Using the field survey stakes and notes from Surveys, the construction field engineering staff determines and lays out all additional lines and grades necessary to construct/ erect/ place a particular structure (or portion of a structure) or portion of the roadway work.
- 270.20.25 Review Contractors' Falsework Submittals - Structure construction field engineering staff's review and approval of the Contractor's falsework submittals for design adequacy, construct-ability, contract compliance, and completeness.
- 270.20.30 Review Contractors' Trenching and Shoring Submittals - Structure construction field engineering staff's review and approval of the Contractor's Trenching & Shoring submittals for design adequacy, construct-ability, contract compliance, and completeness.
- 270.20.35 Review Shop Plans - Includes review and approval by construction and non-construction staff, of Shop Plans/Working drawing for contract compliance.

- 270.20.40 Review Cost Reduction Incentive Proposals (CRIPS) - Review and approval for design adequacy, construct-ability, contract compliance, estimate of cost savings, any necessary specification changes or additions, etc. of a Contractor's submitted CRIP. Development of the CCO for an approved CRIP is included in WBS 285.
- 270.20.45 Review Contractors' Water Pollution Control Program - Review and approval for contract compliance and adequacy for the particular construction project site.
- 270.20.50 Provide Technical Support - Technical Support for the construction engineering staff provided by personnel other than construction staff, providing support to construction engineering activities. Includes Design, Traffic, Hydraulics, Materials, ESC/Structures, Structures Foundation, Environmental, Landscape Architect, Maintenance and other specialty staff.

End Product:

The end of this product coincides with the end of field construction work.

270.25 Perform Construction Contract Administration Work**270.25**

See Sub tasks below

Sub-tasks:

- 270.25.05 Secure Lease for Resident Engineer Office Space or Trailer
- 270.25.10 Set Up Construction Project Files - Involves the initial work to develop the contract administration files.
- 270.25.15 Conduct Pre-construction Meeting - Includes meeting after Pre-Construction meeting to establish Partnering Agreement, and the use of a Dispute Review Board (DRB).
- 270.25.20 Prepare Progress Pay Estimates
- 270.25.25 Prepare Weekly Statement of Working Days
- 270.25.30 Maintain Construction Project Files and General Field Office Clerical Work
- 270.25.35 Perform Labor Compliance Activities
- 270.25.40 Approve Subcontractor Substitutions
- 270.25.45 Coordination - Includes contact with Local agencies and others. Also includes management of the COZEED agreement/contract.

End product:

All administration, record keeping and filing are complete for the construction project up through final estimate.

270.30 Inspect Contract Item Work**270.30**

See Sub tasks below. Includes inspection of CCO work.

Sub-tasks:

- 270.30.05 Photograph Jobsite and Contractors' Operations
- 270.30.10 Inspect Contractors' Work for Compliance - Includes inspection and monitoring of the contractor's Storm Water Pollution Protection Plan (SWPPP) facilities.
- 270.30.15 Review and Document Contractors' Operations Relative to Safety Requirements
- 270.30.20 Prepare Daily Diary of Contract Operations
- 270.30.25 Prepare Punch List

End Product:

Project is in compliance with the Project Plans and Specifications. Construction inspection is complete for the construction project.

270.35 Sample & Test Construction Material**270.35**

See Sub tasks below

Note: This section is subject to revision based on the pending specifications for Quality Control/Quality Assurance.

Sub-tasks:

- 270.35.05 Sample and Test Materials for Quality Assurance
- 270.35.10 Perform Plant Inspection for Quality Assurance
- 270.35.15 Perform Independent Assurance Sampling and Testing
- 270.35.20 Perform Source Inspection

End Product:

Item and method is in compliance with project specifications. All construction sampling and testing is complete for the construction project.

270.40 Perform Safety and Maintenance Reviews 270.40

Reviews after the completion of construction at the project site (or for portions of the project) to ensure that all safety concerns/ requirements have been addressed and that the State Right-of-Way and all State roadway/structures/facilities within the defined project limits have been maintained by the Contractor (from beginning of construction through construction completion and contract acceptance) in accordance with the construction contract.

Sub-tasks:

None identified.

End product:

Field safety and maintenance review(s) completed.

270.45 Process Relief from Maintenance 270.45

Work in processing Relief from Maintenance notice to Contractor after safety and maintenance reviews are complete and the site is in compliance.

Sub-tasks:

None identified

End product:

Written notice of Relief from Maintenance to the Contractor.

270.50 Prepare Certificate of Compliance with Environmental Mitigation Requirements 270.50

In accordance with AB3180, a Certificate of Compliance with Environmental Mitigation Requirements is completed by the Resident Engineer in conjunction with the District Environmental Branch. It lists the environmental mitigation's that were agreed to in the Environmental Document and states the manner by which each was accomplished during construction and, if not, it must state why and what was done instead.

Sub-tasks:

None identified.

End product:

The Certificate of Compliance with Environmental Requirements when completed goes to the State Office of Planning & Research for review and filing.

270.55 Perform Final Inspection and Recommend Acceptance

270.55

Work involved in the final inspection of construction project site after Contractor has done all punch list work, and if all contract work is satisfactory the Resident Engineer will recommend acceptance in writing.

Sub-tasks:

None identified.

End product:

Written Recommendation for Contract Acceptance by the Resident Engineer. The Resident Engineer is also to call, fax, etc. to the District Office and Contractor that same day for timely notification of last working day in the contract.

285 Prepare and Administer Contract Change Orders

Work involved in preparation and administration of contract change orders.

285.05 Prepare and Process Contract Change Order (CCO)

285.05

Includes making the determination of need for a CCO, preparing the supporting information, any design, and the written CCO and Transmittal Memo. Also included is the reviewing and processing of the CCO by the construction engineering and office staff and by staff at the District Office and at Structures Construction and Sacramento HQ office. The field inspection of CCO work and the writing of CCO diaries are to be included in WBS activity 270.30 "Inspect Contract Item Work" and its level 7 activities (270.30.05, through 270.30.25). This activity includes CCOs required after resolution of any claims.

Sub-tasks:

- 285.05.05 Determine Need For CCO - Effort involved in making the determination of need for a CCO, doing field and plan review, discussing the issues with the Contractor, and/ or the District Construction Engineer, Structure Construction Area Supervisor, Structures Construction Sacramento HQ, and the District or Structures Design Engineers, Architects, & Geotechnical personnel.
- 285.05.10 Design and Prepare Draft CCO - Work by construction staff involved in calculating and designing CCO, compiling, delineation, and writing CCO and Transmittal Memo. Effort by other functional areas should be accounted for under 285.10.
- 285.05.15 Process CCO for Approval
- 285.05.20 Process Payments for CCO Work - Work involved in reviewing and approving Contractor's Extra Work Bills, and compiling and documenting information for adjustment payments. Completing all documentation for CCO payments.

End product:

Approved CCO's and processing payments

285.10 Provide Functional Support**285.10**

Work involved in providing functional support (other than the construction engineering or office field staff, or project design engineer staff) to the Resident Engineer/ Structure Rep.

Sub-tasks:

- 285.10.05 Perform Field Surveys for CCO - This is work by survey department to perform a survey required for the CCO. The construction field engineers will only charge to this activity if they are performing field “survey” work. If the construction field engineers are determining lines and grades control for a CCO, the charge activity is 270.20.20 “Determine Lines and Grades Control”.
- 285.10.95 Provide “Other” Functional Support - Technical Support to the construction engineering staff provided by personnel other than construction staff, providing support for the CCO. Includes Design, Traffic, Hydraulics, Materials, ESC/Structures, Structures Foundations, Environmental, Landscape Architect, Maintenance, Geotechnical, and other specialty staff.

End product:

Necessary support information to complete the written CCO, the design, and any CCO drawings.

290 Resolve Contract Claims

Work involved in the documentation and resolution of contract claims.

290.05 Review and Analyze Notices of Potential Claims

290.05

Work involved in reviewing and determining accuracy and validity of Notice of Potential Claims (NOPC).

Sub-tasks:

None identified.

End Product:

Determined response to claim.

290.10 Prepare Supporting Documentation and Respond to Notices of Potential Claims

290.10

Work involved in providing all backup data and copies of reports for the NOPC and responding to the Contractor. This activity also includes organizing and placing information in the project files.

Sub-tasks:

None identified.

End Product:

Written response to claim. Also, a project file will exist for each NOPC that contains the backup data, the NOPC, and the State's response. A positive response will result in a CCO being prepared (see WBS 285).

290.15 Prepare, Review, and Approve Claim Report

290.15

Work at the completion of the construction project due to claims submitted by the Contractor regarding disputes during the course of construction for which the Contractor submitted written notices or protests that were rejected by the Resident Engineer while construction was still in progress. Work in compiling all information for the claim report, requesting additional information from the Contractor when required, and reviewing the claim report.

Sub-tasks:

None identified.

End Product:

Either of:

- Claim approved by Resident Engineer with letter to Contractor stating the resolution of claim, and that CCO will be written to cover work noted in claim (writing, processing, and administering the CCO would be charged to one of the level 6 or level 7 activities under WBS Act. 285 “Prepare and Administer Contract Change Orders”). or
- Claim rejected by Resident Engineer with letter to Contractor stating rejection and stating the Contractor's option if he wanted to pursue the claim further (i.e., District Claim Meeting/ Board of Review).

290.20 Conduct District Claim Meeting or Board of Review**290.20**

Work involved in preparing, conducting, and documenting the District Claim Meeting or Board of Review. This work would be as a result of the Contractor pursuing a claim further after it has been rejected by the Resident Engineer after completion of the construction project.

Sub-tasks:

None identified.

End Product:

Written notice of claim finding.

290.25 Prepare for and Participate in Arbitration Hearing**290.25**

Work involved in preparing for, participating in, and documenting the arbitration hearing. This activity could also include a Resident Engineer's/ Structure Rep's work involved in reopening the project EA if required. Includes appearing as expert witness.

Sub-tasks:

None identified.

End Product:

- An arbitration decision.
- Payment, if any, that has been authorized by the arbitration decision is made to the Contractor
- Closure of project EA.

290.30 Negotiate Claim Settlement**290.30**

Negotiate claim settlement prior to the District Claim meeting or Board of Review. Includes providing documentation for project files. CCOs required because of settlement should be captured under WBS 285 (CCOs).

Sub-tasks:

None identified.

End Product:

Claim settlement or determination to go to Board of Review/District Claim Meeting.

290.35 Provide Technical Support**290.35**

All work necessary to provide back-up data, information to Claim's staff in their analysis, negotiation, resolution of construction claims, its settlement and disposition throughout the claims process including the District Claim meeting or Board of Review. Includes providing documentation for project files. Any support given for CCOs required in settlement should be captured under WBS 285 (CCOs). Includes Design, Traffic, Hydraulics, Materials, ESC/Structures, Structures Foundation, Environmental, Landscape Architect, Maintenance and other specialty staff.

Sub-tasks:

None Identified.

End product:

Claim settlement.

295 Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report

Work involved in the acceptance and final documentation of a construction contract.

295.05 Process Estimate After Acceptance

295.05

The work involved in preparing payment documents for processing the After Acceptance (AA) Estimate (the last "monthly progress" estimate) after the Resident Engineer has recommended acceptance and the District Director has given acceptance. Processing the After Acceptance Estimate includes processing the estimate by District Office staff, the review and approval of the Automated Progress Pay Estimate by the Resident Engineer/ Structure Rep, and the subsequent processing for payment to the Contractor by the District Office staff. This activity also includes preparation of Semi Final Estimates (SF). Preparation and processing of the Proposed Final Estimate (PFE) is in activity 295.10.

Sub-tasks:

None identified.

End Product:

The After Acceptance Estimate OR a Semi Final Estimate where there are still unresolved exceptions/claims from the Contractor in response to the Proposed Final Estimate (PFE). It is possible that several Semifinal Estimates will be processed while exceptions/claims are resolved before the After Claims Final Estimate (FE) is processed by the District Office staff for payment to the Contractor.

295.10 Prepare Proposed Final Contract Estimate

295.10

The work involved in preparation of payment documents and preparing the Proposed Final Estimate (PFE) for processing. The Proposed Final Estimate is done in writing by the Resident Engineer after construction contract acceptance by the District Director and after the progress Estimate After Acceptance has been processed.

If the Contractor reviews the Proposed Final Estimate and returns notice to the District Office and Resident Engineer that he accepts the estimate without exceptions, then the District Office processes the Proposed Final Estimate for payment to the Contractor (in this case, the Proposed Final Estimate is also the Final Estimate (FE)).

If the Contractor reviews the Proposed Final Estimate and accepts the estimate with a following list of exceptions/claims then the work to review those exceptions/claims is included in activity 290.15 "Prepare, Review, and Approve Claim Report". If there are any exceptions/claims, then the work to prepare a Semi Final Estimate (SF) and

forward it to the District Office to process for payment is included in this activity (295.05).

Preparing any additional Semifinal Estimates after reaching negotiated settlements or receiving required paperwork for any particular exceptions/claims (but with 1 or more claims still outstanding) will be work included in this activity 295.05.

Sub-tasks:

Perform additional (supplemental) survey/mapping work needed to determine/verify the PFE.

End Product:

Proposed Final Estimate (effectively the Final Estimate) where no claims have been submitted.

295.15 Prepare As-Built Plans

295.15

Includes preparation work involves transferring all as-built changes, or required as-built information onto the set of plans dedicated as the red-line mark-up set of As-Built Plans. This activity also involves putting together the marked up set of As-Built Plans and forwarding all of the District roadway As-Built to the District Office and all of the structure plans to Structures HQ for review. Also included in this activity is work by the design section structural technicians to transfer the red-line As-Built plan mark-ups to the original full size reproducible plan sheets (or CADD file) and forwarding a reproducible set of plans with the transferred As-Built changes to the office 'As-Built' Section for filing, scanning, and microfilming.

Sub-tasks:

None identified.

End Product:

- As-Built Microfilms for complete set of project plans (roadway + structures) in District Office 'As-Built' Section.
- Structure As-Built plans scanned into database in Sacramento in the Office of Structure Maintenance & Investigations by 'As-Built' Section.
- As-Built microfilms for any Overhead or Underpass forwarded to railroad.

295.20 Prepare Project History File**295.20**

The work involved in the preparation of the construction project files (including information from the District RE file, the District Project Files and the Structures R.E. Pending File). This activity includes the effort in recording & archive storage of project records. Also, included in this activity, the Structure Rep forwards copies of all Pile Records to the Sacramento Structure Construction Office for recording.

Sub-tasks:

None identified.

End Product:

All records required by the District Office to be stored after construction project completion are bound as a Project File and stored in the District Office.

295.25 Prepare Final Report**295.25**

A Report of Completion for each structure is to be prepared by the Structure Rep for forwarding to the Office of Structure Construction. The Joint Seal Calculations, and all Paint Records are also to be forwarded by the Structure Rep & their staff to the Office of Structure Construction. The Resident Engineer also prepares a Report of Completion for roadway work that includes copies of each of the Reports of Completion for structure work, and forwards it to the District Office.

Sub-tasks:

None identified.

End Product:

- A Report of Completion for each structure with Joint Seal Calculations (when applicable) and Paint Records (when applicable) recorded and scanned into storage by the Office of Structure Maintenance & Investigations in Sacramento.
- A District roadway Report of Completion recorded and stored in the District Office.

295.30 Process Final Estimate**295.30**

The work involved in the preparation of the After Claims Final Estimate. This estimate is prepared and processed either after all claims have been negotiated and resolved (& after any necessary CCOs are processed to resolve claims [see sub-activities for activity 285 'Prepare and Admin. CCOs]) between the Contractor and the Resident Engineer/ Structure Rep (without the need for a District Claim Meeting or Board of Review) or after a decision on the claims is made after a District Claim Meeting or Board of Review. The processing the After Claims Final Estimate does not wait for arbitration if the Contractor decides to pursue a claim to that level.

Sub-tasks:

None identified.

End Product:

Final payment by the State to the construction Contractor for the entire sum so found to be due (the only exception being if the Contractor were to pursue a claim to arbitration and have that arbitration conclude with an award of additional payment). The Contract EA is closed to all further charges (in the event that the Contractor pursues a claim to arbitration, the EA be reopened for charging).

300 Perform Final Right of Way Activities

Work involved in condemnation/settlement proceedings, administration of utility relocation work not included as part of the project's construction contract (item or CCO work), and Right of way Monumentation activities.

300.05 Monument the Right of Way and Prepare Monumentation Maps

300.05

Effort includes field and office land surveying work required to be in compliance with the Professional Land Surveyors Act.

Sub-tasks:

- 300.05.05 Perform Right of Way Monumentation Survey - Includes all right of way monumentation field survey effort before, during and at completion of project construction. (NOTE: Pre-construction land-net monument perpetuation effort should be performed under activity 220.05.20)
- 300.05.10 Prepare and File Monumentation Maps - Includes all effort required for preparation and filing of required Monumentation Maps. (NOTE: The Monumentation Map may show pre-construction land-net monument preparation if not shown on Activity 220.05.20 documents)

End product:

- Filed Monumentation Map

300.10 Perform Continuing Condemnation Activities

300.10

Effort includes hiring independent appraisers, legal liaison, assisting in trial preparation, participating in pre-trial conferences, work in and out of courtroom during trial, filing judgments, recording final orders, arranging for deposits of probable compensation, monitoring condemnation activities.

Sub-tasks:

- 300.10.05 Prepare Trial Exhibits - Involves Right of Way Engineering effort in the preparation for a condemnation trial, such as exhibits and field trips to inspect property, etc..
- 300.10.10 Confer with Attorneys - Effort involves Right of Way Engineering personnel in conference with attorneys and court appearance (actual and standby) relating to condemnation trials. Includes depositions.
- 300.10.15 Review/Prepare Condemnation Appraisal - Effort includes preparing and reviewing appraisals to be used in regular or inverse condemnation proceedings. Includes building cost estimator's time. Also includes condemnation goodwill appraisals and pretrial work.
- 300.10.20 Appear as Expert Witness - Includes preparation for a trial.

End product:

- Trial Exhibits
- Condemnation Appraisal
- Final Order of Condemnation

300.15 Perform Utility Relocation**300.15**

This activity involves all work related to the utility relocation prior to, during, or after construction of the project. Also includes determining the construction schedule for utility relocations.

Sub-tasks:

- 300.15.05 Coordinate Relocation with Utility Owner
- 300.15.10 Administer / Inspect Relocation Work - Includes pre-construction meetings, monitoring, and discovered work.

End product:

- Utility relocation completed

300.20 Perform Close Out**300.20**

See sub tasks

Sub-tasks:

- 300.20.05 Process Billings per Utility Agreement - Includes preparation, and processing invoices, etc.
- 300.20.10 Prepare Director's Deed/JUA/CCUA - Includes Utility coordinator effort in preparing the final agreements
- 300.20.15 Perform Final Audit - Includes effort in closing out Utility file and ensuring all transactions are complete
- 300.20.20 Amend Utility Agreement
- 300.20.25 Review Completed Maps and Plans - Includes R/W Engineering effort in reviewing R/W Record Maps, Monumentation maps and Plan "As-Built" for completeness and conformance.
- 300.20.30 Perform Final Vouchering - Includes effort to close out right of way costs on project after construction is complete. Contributes to overall cost of the project.

End product:

- Director's Deed for JUA/CCUA
- Closed Utility File
- Final Record Map
- Final project Right of Way cost.

300.25 Prepare Relinquishment and Vacation Maps

300.25

Includes all work required to complete the relinquishment and vacation process of state facilities and right of way and collateral facilities, normally after completion of project construction.

Sub-tasks:

- Prepare Relinquishment Maps
- Prepare Vacation Maps
- Prepare corresponding documentation
- Prepare CTC Resolution

End product:

CTC Resolution recorded at County Recorder's Office.

Appendix A

List of Changed Activities from WBS 2.0 (6/95)

~~Strikeout~~ indicates deletions. *Italic* indicates additions.

Note: these are only the activities with changes.

100.05.25	Hold Project Team Meetings
<i>100.25</i>	<i>Manage Project Scope</i>
150.05.10	Perform Geology Hazards Report <i>Review</i>
150.15.55	Develop Cost <i>Construction</i> Estimates
150.20.10	Perform Hazardous Waste Investigation (<i>Initial Site Investigation (ISA)</i>)
150.20.15	Perform Landscape/ Visual <i>Aesthetic</i> Analysis
150.20.40	Perform Initial Socioeconomic, <i>Community Studies</i> , Land Use and Growth Issues
<i>150.20.65</i>	<i>Perform Initial Paleontology Study</i>
<i>150.20.70</i>	<i>Perform Initial Native American Coordination</i>
165.10.10	Obtain Rights of Entry for Permit for Environmental Studies
165.10.45	Prepare Environmental <i>Summary of Geotechnical Report</i>
165.10.50	Perform Preliminary Site Investigation for <i>Hazardous Waste</i>
<i>165.10.65</i>	<i>Perform Paleontology Study</i>
165.20.05	Prepare Area of Potential Effect Map (<i>APE</i>) <i>Map</i>
165.20.15	Prepare Historical Study Report (HSR) <i>-combined HSR, HRER, HASR</i>
165.20.20	Perform Extended Phase I Archaeology Study (<i>XPI</i>)
165.20.30	Prepare Archaeology Survey Report [ASR]
165.20.35	Prepare Historic Resource Evaluation Report -<i>Historic</i> [HRER-H]
165.20.40	Prepare Historic Architectural Survey Report (HASR)
165.20.50	Prepare <i>Finding</i> Determination Of Effect
165.20.55	Obtain Public Resources Code <i>Perform PRC 5024 Consultation</i>
165.20.60	Perform Paleontology Investigation
165.25.20	Conduct <i>Environmental</i> PEER and Other Reviews
<i>175.05.20</i>	<i>Obtain Federal Consistency Determinations (Coastal Zone)</i>
175.10.10	Arrange for Public Hearing Logistic Select Public Hearing Officer
<i>185.15.20</i>	<i>Perform Value Analysis</i>
185.25.30	Attest To Sufficiency Of Right Of Way
190.05	Assemble and Analyze Data For Structure Site Plans and Design
190.35	Prepare Site Plans For Bikeway and Pedestrian Structures
200.05	Perform Preliminary Coordination <i>Utility Verification</i>
200.05.05	Conduct Preliminary Meetings
200.05.10	Inspect Utility Facilities
200.05.15	Review Project Data [Project Report/ Etc.]
<i>200.15</i>	<i>Determine Utility Right Of Way Needs</i> Utility Conflict Resolution
200.15.05	Obtain Permits For Utility Relocation
200.15.10	Determine Need For Utility Encroachment Exceptions
200.15.15	Obtain Exceptions To Encroachment Policy
200.20.05	Prepare Utility Agreements <i>Liability/FHWA Authorization Package</i>

- 200.20.10 ~~Process Owners Claims~~ *Review and Approve Liability/ FHWA Authorization Package*
- 200.20.15 ~~Obtain Utility Plans [From Utility Companies]~~ *Transmit Notice/Agreement/Permit to Utility Owner*
- 200.20.20 ~~Determine Liability~~ *Prepare Utility Clearance Letter for R/W Certification*
- ~~200.20.25 Prepare Report Of Investigation~~
- ~~200.20.30 Review and Approve Relocation Agreements~~

- 205.10.30 ~~Obtain Local Agency Conditional Use Concurrence/Permit [Local Agency]~~
- ~~205.10.35 Obtain Grading Permit [Local Agency]~~
- 205.15.05 ~~Request Railroad Participation In Funding~~ *Obtain Plan Approval*
- 205.15.10 ~~Prepare Railroad Participation Cost Estimate~~ *Special Provisions and Insurance cCauses*
- 205.15.15 ~~Obtain Railroad Agreement~~ *Prepare Service Contract for Railroad Services*
- 205.15.20 *Negotiate and Obtain Construction and Maintenance Agreements*
- 205.15.25 *Prepare PUC Exhibits and Application*
- 205.30 ~~Prepare and Review~~ *Execute Maintenance Agreement and Relinquishment and Vacation Maps*
- 205.35.05 *Prepare and Execute Cooperative Agreement for Environmental Process*
- 205.45 ~~Obtain MOU from Tribal Employment Rights Office (TERO) Requirements~~
- 205.50 *Prepare and Execute Cooperative Agreement for Relinquishment* ~~Relinquish Existing State Highway~~

Note: The numbering system for individual structures in the “210 Prepare Preliminary Structures Design Data” has changed with this version. Where 210.05 used to represent the Level 6 activities for Structure 1, 210.10 represented Structure 2, 210.15 represented Structure 3 and so on to Structure 18. This version of the WBS changes the numbering to make it easier to understand. 210.01 now represents activities for Structure 1, 210.02 now represents activities for Structure 2, and so forth to Structure 89, if needed. Only the changes in the set of activities for a structure are shown here.

- ~~210.05 Prepare Preliminary Structures Design Data for Structure 1~~
- ~~210.05.05 Review District Submittal~~
- ~~210.05.10 Perform Structures Field Investigation~~
- ~~210.05.15 Prepare Preliminary Report and Hydrology Information~~
- ~~210.05.20 Prepare Foundation Plan~~
- ~~210.05.25 Prepare Preliminary Structures Foundation Report~~
- ~~210.10 Prepare Preliminary Structures Design Data for Structure 2~~
- ~~210.10.05 Review District Submittal~~
- ~~210.10.10 Perform Structures Field Investigation~~
- ~~210.10.15 Prepare Preliminary Report and Hydrology Information~~
- ~~210.10.20 Prepare Foundation Plan~~
- ~~210.10.25 Prepare Preliminary Structures Foundation Report~~
- ~~210.95 Prepare Preliminary Structures Design Data for "Other" Structures~~

210.95.05	Review District Submittal
210.95.10	Perform Structures Field Investigation
210.95.15	Prepare Preliminary Report and Hydrology Information
210.95.20	Prepare Foundation Plan
210.95.25	Prepare Preliminary Structures Foundation Report
210.01	<i>Prepare Preliminary Structures Design Data For Structure 1</i>
210.01.05	<i>Review District Submittal</i>
210.01.10	<i>Perform Structures Site Investigation</i>
210.01.15	<i>Prepare Preliminary Structure Report</i>
210.01.20	<i>Prepare Draft Foundation Plan</i>
210.01.25	<i>Prepare Preliminary Structures Foundation Report</i>
210.01.30	<i>Prepare Hydrology Report</i>
210.02	<i>Prepare Preliminary Structures Design Data For Structure 2</i>
210.02.05	<i>Review District Submittal</i>
210.02.10	<i>Perform Structures Site Investigation</i>
210.02.15	<i>Prepare Preliminary Structure Report</i>
210.02.20	<i>Prepare Draft Foundation Plan</i>
210.02.25	<i>Prepare Preliminary Structures Foundation Report</i>
210.02.30	<i>Prepare Hydrology Report</i>
210.89	<i>Same text and activities as structures above</i>

Note: The numbering system for individual structures in the “215 Prepare Structures General Plans” series has changed with this version. Where 215.05 used to represent the Level 6 activities for Structure 1, 215.10 represented Structure 2, 215.15 represented Structure 3 and so on to Structure 18. This version of the WBS changes the numbering to make it easier to understand. 210.01 now represents activities for Structure 1, 210.02 now represents activities for Structure 2, and so forth to Structure 89, if needed. Only the changes in a set of activities for a structure are shown here.

215.05	Prepare Structure General Plans for Structure 1
215.05.05	Develop Preliminary Structures Plan
215.05.05.05	Review As-Built Plans and Preliminary Foundation Information
215.05.05.10	Perform Field Review
215.05.05.15	Perform Preliminary Design/ Seismic Analysis
215.05.10	Delineate Preliminary Structures Plans
215.05.15	Develop Preliminary Quantities
215.05.20	Develop Preliminary Estimate
215.05.25	Approve Preliminary Plan (Type selection/Strategy mtg.)
215.05.25.05	Update Structures General Plan Sheets
215.05.25.10	Delineate Structures General Plan
215.05.25.15	Develop Quantities
215.05.25.20	Develop Structures General Plan Cost Estimate
215.05.30	Prepare PUC Railroad Exhibits

~~215.05.35 — Foundation Field Investigation~~
~~215.05.40 — Prepare Foundation Report and Log of Test Borings~~
~~215.10 — Prepare Structure General Plans for Structure 2~~
~~215.10.05 — Develop Preliminary Structures Plan~~
~~215.10.05.05 — Review As-Built Plans and Preliminary Foundation Information~~
~~215.10.05.10 — Perform Field Review~~
~~215.10.05.15 — Perform Preliminary Design/ Seismic Analysis~~
~~215.10.10 — Delineate Preliminary Structures Plans~~
~~215.10.15 — Develop Preliminary Quantities~~
~~215.10.20 — Develop Preliminary Estimate~~
~~215.10.25 — Approve Preliminary Plan (Type selection/Strategy mtg.)~~
~~215.10.25.05 — Update Structures General Plan Sheets~~
~~215.10.25.10 — Delineate Structures General Plan~~
~~215.10.25.15 — Develop Quantities~~
~~215.10.25.20 — Develop Structures General Plan Cost Estimate~~
~~215.10.30 — Prepare PUC Railroad Exhibits~~
~~215.10.35 — Foundation Field Investigation~~
~~215.10.40 — Prepare Foundation Report and Log of Test Borings~~

~~215.95 — Prepare Structure General Plans for "Other" Structures~~
~~215.95.05 — Develop Preliminary Structures Plan~~
~~215.95.05.05 — Review As-Built Plans and Preliminary Foundation Information~~
~~215.95.05.10 — Perform Field Review~~
~~215.95.05.15 — Perform Preliminary Design/ Seismic Analysis~~
~~215.95.10 — Delineate Preliminary Structures Plans~~
~~215.95.15 — Develop Preliminary Quantities~~
~~215.95.20 — Develop Preliminary Estimate~~
~~215.95.25 — Approve Preliminary Plan (Type selection/Strategy mtg.)~~
~~215.95.25.05 — Update Structures General Plan Sheets~~
~~215.95.25.10 — Delineate Structures General Plan~~
~~215.95.25.15 — Develop Quantities~~
~~215.95.25.20 — Develop Structures General Plan Cost Estimate~~
~~215.95.30 — Prepare PUC Railroad Exhibits~~
~~215.95.35 — Foundation Field Investigation~~
~~215.95.40 — Prepare Foundation Report and Log of Test Borings~~

215.01 *Prepare Structure General Plans For Structure 1*
215.01.05 *Develop Preliminary Design*
215.01.10 *Prepare Preliminary Plan Sheets*
215.01.15 *Develop Preliminary Quantities*
215.01.20 *Perform Foundation Field Investigation*
215.01.25 *Prepare Foundation Report and Log of Test Borings*
215.02 *Prepare Structure General Plans For Structure 2*
215.02.05 *Develop Preliminary Design*

215.02.10	<i>Prepare Preliminary Plan Sheets</i>
215.02.15	<i>Develop Preliminary Quantities</i>
215.02.20	<i>Perform Foundation Field Investigation</i>
215.02.25	<i>Prepare Foundation Report and Log of Test Borings</i>
215.90	<i>Prepare Structure General Plans For “Overall” Project</i>
215.90.05	<i>Develop Preliminary Estimates</i>
215.90.10	<i>Approve Preliminary Plans (Type Selection/Strategy Mtg)</i>
215.95	<i>Prepare Structure General Plans For “Other” Structure</i>
215.95.05	<i>Develop Preliminary Design</i>
215.95.10	<i>Prepare Preliminary Plan Sheets</i>
215.95.15	<i>Develop Preliminary Quantities</i>
215.95.20	<i>Perform Foundation Field Investigation</i>
215.95.25	<i>Prepare Foundation Report and Log of Test Borings</i>
220.05	<i>Retrace and Perpetuate Existing Land Net</i>
220.10.20	<i>Prepare and File Record of Survey Retracement Map</i>
220.15.05	<i>Prepare Preliminary Appraisal Map</i>
220.15.10	Prepare Final Appraisal Map <i>Prepare and File Record of Survey</i>
220.20.10	<i>Prepare Deeds and Ancillary Conveyance Documents</i>
220.25	<i>Prepare Deeds Package to Fulfill Contract Obligations</i>
220.25.15	Prepare Utility Deeds <i>Utility Legal Description and Plat</i>
220.35.10	Plot <i>Delineate Excess Land Parcels</i>
220.35.15	Prepare Final Record Map <i>Verify & Post Conveyance Docs</i>
225.05.35	<i>R/W Appraisal Staking Survey</i>
225.10.25	<i>R/W Acquisition Staking Survey</i>
225.25	<i>Process Federal-Aid Documents</i>
230.10.05	Design <i>Prepare Highway Planting Plans</i>
230.10.10	Delineate Highway Planting Plans
230.10.20	Design <i>Prepare Irrigation Plans</i>
230.10.25	Delineate Irrigation Plans
230.15.20	Prepare Lane Closure Charts
230.20	<i>Prepare Draft Traffic Management Plan</i>
230.35.30	<i>Develop Hydraulic Specifications</i>
230.40.35	Calculate Miscellaneous Quantities and Estimate
230.45	Update Right Of Way Cost Estimate
230.50	Perform District Safety Review
230.55	<i>Incorporate Structures Draft PS&E</i>
235.05.10	Recover Archaeological Data <i>Perform Archaeological and Cultural Mitigation</i>
235.05.25	<i>Perform Paleontology Mitigation</i>

235.10 Perform Detailed Site Investigation *for Hazardous Waste*
~~235.25.05 Prepare Hazardous Waste Clean Up Task Orders~~

Note: The numbering system for individual structures has changed for the series “240 Prepare Draft Structures PS&E” with this version. Where 240.05 used to represent the Level 6 activities for Structure 1, 240.10 represented Structure 2, 240.15 represented Structure 3 and so on to Structure 18. This version of the WBS changes the numbering to make it easier to understand. 240.01 now represents activities for Structure 1, 240.02 now represents activities for Structure 2, and so forth to 240.89 for Structure 89, if needed. Only the changes in the set of activities for a structure are shown here.

~~240.05 Prepare Draft Structure PS&E for Structure 1~~
~~240.05.05 Perform Design~~
~~240.05.05.05 Perform Structures Design Calculations~~
~~240.05.05.10 Develop Unchecked Details~~
~~240.05.05.15 Delineate Structures Unchecked Details~~
~~240.05.10 Delineate Plan Sheets~~
~~240.05.15 Distribute and Review Unchecked Plans~~
~~240.05.20 Check Design and Plan Sheets~~
~~240.05.20.05 Perform Structures Design Check~~
~~240.05.20.10 Review Checked Details~~
~~240.05.20.15 Delineate Structures Checked Details~~
~~240.05.25 Distribute and Review Checked Plan Sheets~~
~~240.05.30 Prepare Quantities~~
~~240.05.35 Perform Foundation Review~~
~~240.05.40 Prepare Draft Specifications~~
~~240.05.45 Prepare Estimate~~
~~240.05.50 Review Draft Specifications and Estimate~~
~~240.05.50.05 Address Specification and Estimate Comments~~
~~240.05.50.10 Delineate Draft Structures PS&E~~
 240.10 Prepare Draft Structure PS&E for Structure 2
 240.10.05 Perform Design
 240.10.05.05 Perform Structures Design Calculations
 240.10.05.10 Develop Unchecked Details
 240.10.05.15 Delineate Structures Unchecked Details
 240.10.10 Delineate Plan Sheets
 240.10.15 Distribute and Review Unchecked Plans
 240.10.20 Check Design and Plan Sheets
 240.10.20.05 Perform Structures Design Check
 240.10.20.10 Review Checked Details
 240.10.20.15 Delineate Structures Checked Details
 240.10.25 Distribute and Review Checked Plan Sheets
 240.10.30 Prepare Quantities
 240.10.35 Perform Foundation Review
 240.10.40 Prepare Draft Specifications
 240.10.45 Prepare Estimate

240.10.50	Review Draft Specifications and Estimate
240.10.50.05	Address Specification and Estimate Comments
240.10.50.10	Delineate Draft Structures PS&E
240.95	Prepare Draft Structure PS&E for "Other" Structures
240.95.05	Perform Design
240.95.05.05	Perform Structures Design Calculations
240.95.05.10	Develop Unchecked Details
240.95.05.15	Delineate Structures Unchecked Details
240.95.10	Delineate Plan Sheets
240.95.15	Distribute and Review Unchecked Plans
240.95.20	Check Design and Plan Sheets
240.95.20.05	Perform Structures Design Check
240.95.20.10	Review Checked Details
240.95.20.15	Delineate Structures Checked Details
240.95.25	Distribute and Review Checked Plan Sheets
240.95.30	Prepare Quantities
240.95.35	Perform Foundation Review
240.95.40	Prepare Draft Specifications
240.95.45	Prepare Estimate
240.95.50	Review Draft Specifications and Estimate
240.95.50.05	Address Specification and Estimate Comments
240.95.50.10	Delineate Draft Structures PS&E
240.01	Prepare Draft Structure PS&E For Structure 1
240.01.05	Perform Design
240.01.10	Prepare Plan Sheets
240.01.15	Check Design and Plan Sheets
240.01.20	Prepare Quantities
240.02	Prepare Draft Structure PS&E For Structure 2
240.02.05	Perform Design
240.02.10	Prepare Plan Sheets
240.02.15	Check Design and Plan Sheets
240.02.20	Prepare Quantities
240.89	Prepare Draft Structure PS&E For Structure 89
(Same as for other structures)	
240.90	Prepare Draft Structure PS&E for "Overall" Project
240.90.05	Distribute and Review Unchecked Plans
240.90.10	Distribute and Review Checked Plan Sheets
240.90.15	Perform Foundation Review

240.90.20	<i>Prepare Draft Specifications</i>
240.90.25	<i>Prepare Estimate</i>
240.90.30	<i>Review Draft Plans, Specifications ,and Estimate</i>
240.95	<i>Prepare Draft Structure PS&E For “Other” Structures</i>
240.95.05	<i>Perform Design</i>
240.95.10	<i>Prepare Plan Sheets</i>
240.95.15	<i>Check Design and Plan Sheets</i>
240.95.20	<i>Prepare Quantities</i>
250.05	<i>Incorporate District Comments into Structures Plans PS&E</i>
250.10.05	Design Structures Plan Revisions
250.10.10	Perform Final Structures Office Engineer Review
250.10.15	Delineate Final Structures PS&E
255.05.05	Review Final Plans For Constructability
255.05.10	Review Project For Final Permit Needs
255.05.15	Review Aesthetics
255.05.20	Review Materials Specifications
255.05.95	Perform ‘Other’ Reviews
255.10.30	<i>Update Utility PS&E</i>
255.10.35	<i>Update Electrical PS&E</i>
255.20.10	<i>Incorporate Final Structures Specifications and Estimate Into Final District PS&E</i>
255.20.20	Delineate Plan Changes
260.05	Schedule Project
260.15.10	<i>Incorporate District Revisions</i>
260.20.05	Review Final Plans Final Plan Preparation
260.20.10	Incorporate Final Plan Review Into Update Contract Documents
260.20.15	<i>Develop MBE/WBE/DVBE/ DBE Match List and Set Goals</i>
260.20.25	Type Prepare Final Specifications and Proposal and Contract Documents
260.20.35	<i>Delineate Plans</i>
265.05	List Project
265.10.05	<i>Schedule Project for Advertising</i>
265.10.10	<i>Advertise Project - State Contracts Register</i>
265.10.15	<i>Advertise Project - Newspapers</i>
265.25	<i>Respond to Inquiries & Open Bids</i> [Includes Responding To Bidders Inquiries]
265.30.05	<i>Evaluate MBE/WBE/DVBE/DBE Goal Good Faith Effort and Hearings</i>
	MBE/Wbe/Dbe Goal Attainment or Good Faith Effort
265.30.10	<i>Resolve Bid Award Issues and Hearings</i>
265.30.15	<i>Prepare, and Process, and Award Documents</i> Contract
270.05	<i>Prepare Resident Engineer’s File and Grid Grades</i>

270.20.20	Determine Lines and Grades <i>Control</i>
270.25.10	Set Up <i>Construction</i> Project Files
270.25.30	Maintain Contract <i>Construction Project</i> Files and General Field Office Clerical Work
270.25.45	<i>Coordination</i>
270.40	<i>Perform Safety and Maintenance Reviews</i>
270.45	<i>Process Relief from Maintenance</i>
270.50	<i>Prepare Certificate of Compliance with Environmental Mitigation Requirements</i>
270.55	<i>Perform Final Inspection and Recommend Acceptance</i>
290.35	<i>Provide Technical Support</i>
295.05	Perform Safety and Maintenance Reviews
295.10	Process Relief From Maintenance
295.15	Prepare Certificate Of Compliance With Environmental Mitigation Requir
295.20	Perform Final Inspection and Recommend Acceptance
295.25 05	Process Estimate After Acceptance
295.30 10	Prepare Proposed Final Contract Estimate
295.35 15	Prepare As-Built Plans
295.40 20	Prepare Project History File
295.45 25	Prepare Final Report
295.50 30	Process Final Estimate
300.05.05	Perform Final <i>Right of Way</i> Monumentation Survey
300.15.05	Transmit Notice / Utility Agreement To Owner
300.15.40 05	Coordinate Relocation With Utility Owner
300.15.45 10	Administer / Inspect Relocation Work
300.20.30	<i>Perform Final Vouchering</i>
300.25	<i>Prepare Relinquishment and Vacation Maps</i>

Appendix B

List of WBS 3.0 Tasks Sorted Numerically by Level 4 with Level 4 code

- 0.100 Perform Project Management
- 1.150 Develop Project Initiation Document (PID)
- 2.160 Perform Preliminary Engineering Studies and Prepare Draft Project Report
- 2.165 Perform Environmental Studies and Prepare Draft Environmental Document (DED)
- 2.175 Circulate Draft Environmental Document and Select Preferred Project Alternative
- 2.180 Prepare and Approve Project Report and Final Environmental Document
- 3.205 Obtain Permits, Agreements, and Route Adoptions
- 3.235 Mitigate Environmental Impacts and Clean Up Hazardous Waste
- 4.185 Prepare Base Maps and Plan Sheets
- 4.190 Prepare Structure Site Plans
- 4.230 Prepare Draft PS&E
- 4.255 Circulate, Review, and Prepare Final District PS&E Package
- 5.210 Prepare Preliminary Structures Design Data
- 5.215 Prepare Structures General Plans
- 5.240 Prepare Draft Structures PS&E
- 5.250 Prepare Final Structures PS&E Package
- 6.200 Coordinate Utilities
- 6.220 Perform Right of Way Engineering
- 6.225 Certify Right of Way
- 7.260 Prepare Contract Documents
- 7.265 Advertise, Open Bids, Award, and Approve Contract
- 8.270 Perform Construction Engineering and General Contract Administration
- 8.285 Prepare and Administer Contract Change Orders
- 9.290 Resolve Contract Claims

- 9.295 Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report
- 9.300 Perform Final Right of Way Activities

Appendix C

List of WBS Tasks Sorted Numerically by Level 5 with Level 4 code

- 0.100 Perform Project Management
- 1.150 Develop Project Initiation Document (PID)
- 2.160 Perform Preliminary Engineering Studies and Prepare Draft Project Report
- 2.165 Perform Environmental Studies and Prepare Draft Environmental Document (DED)
- 2.175 Circulate Draft Environmental Document and Select Preferred Project Alternative
- 2.180 Prepare and Approve Project Report and Final Environmental Document
- 4.185 Prepare Base Maps and Plan Sheets
- 4.190 Prepare Structure Site Plans
- 6.200 Coordinate Utilities
- 3.205 Obtain Permits, Agreements, and Route Adoptions
- 5.210 Prepare Preliminary Structures Design Data
- 5.215 Prepare Structures General Plans
- 6.220 Perform Right of Way Engineering
- 6.225 Certify Right of Way
- 4.230 Prepare Draft PS&E
- 3.235 Mitigate Environmental Impacts and Clean Up Hazardous Waste
- 5.240 Prepare Draft Structures PS&E
- 5.250 Prepare Final Structures PS&E Package
- 4.255 Circulate, Review, and Prepare Final District PS&E Package
- 7.260 Prepare Contract Documents
- 7.265 Advertise, Open Bids, Award, and Approve Contract
- 8.270 Perform Construction Engineering and General Contract Administration
- 8.285 Prepare and Administer Contract Change Orders
- 9.290 Resolve Contract Claims
- 9.295 Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report
- 9.300 Perform Final Right of Way Activities

Appendix D

List of All Activities

100	Perform Project Management
100.05	Develop & Manage Schedule and Support Budget
100.05.05	Develop and Manage Initial (PID) Project Schedule & Support Budget
100.05.10	Develop and Manage Baseline Schedule and Support Budget
100.05.15	Develop & Maintain Work Agreements
100.05.20	Monitor Expenditure Information
100.10	Maintain Project Data
100.10.05	Maintain Project Data in Project Management Database
100.10.10	Obtain EA's and Maintain Accounting Data
100.10.95	Maintain "Other" Data
100.15	Respond to Internal & External Requests for Information
100.20	Procure External Resources
100.20.05	Obtain Consultants
100.20.10	Administer Consultant Contracts
100.25	Manage Project Scope

150	Develop Project Initiation Document (PID)
150.05	Define Transportation Problem & Assess Site
150.05.05	Obtain and Review Existing Reports, Studies and Mapping
150.05.10	Perform Geology Hazards Review
150.05.15	Perform Utility Search
150.05.20	Identify Environmental Constraints
150.05.25	Prepare Traffic Forecasts/Modeling
150.05.30	Perform Surveys & Mapping for PID
150.05.35	Define Problem
150.10	Develop Initial Alternatives
150.10.05	Obtain Public/Local Agency Input
150.10.10	Perform Value Analysis
150.10.15	Develop Concept Geometrics
150.15	Analyze Alternatives
150.15.05	Prepare R/W Data Sheets
150.15.10	Assess Utility Relocation Requirements
150.15.15	Determine Railroad Involvement
150.15.20	Prepare Preliminary Geotechnical Report
150.15.25	Prepare Preliminary Materials Report
150.15.30	Prepare Structures Advance Planning Study
150.15.35	Perform Multimodal Review
150.15.40	Perform Hydraulic Review
150.15.45	Perform Traffic Capacity Analysis
150.15.50	Perform Traffic Studies
150.15.55	Develop Construction Estimates
150.20	Perform Preliminary Environmental Evaluation
150.20.05	Perform Initial Noise Study
150.20.10	Perform Hazardous Waste Assessment (Initial Site Assessment (ISA))
150.20.15	Perform Landscape/Aesthetic Analysis
150.20.20	Perform Initial NEPA / 404 Coordination
150.20.25	Perform Initial Biology Study
150.20.30	Perform Initial Culture Resource Archaeology Study
150.20.35	Perform Initial Culture Resource Section 106/Historic Study
150.20.40	Perform Initial Socioeconomic, Community Studies, Land Use and Growth Issues
150.20.45	Perform Initial Air Quality Study
150.20.50	Perform Initial Water Quality Studies
150.20.55	Perform Initial Floodplain Study
150.20.60	Prepare Preliminary Environmental Evaluation
150.20.65	Perform Initial Paleontology Study
150.20.70	Perform Initial Native American Coordination
150.25	Prepare and Approve PID (PSR, PSSR, etc.)
150.25.05	Prepare Draft PID
150.25.10	Prepare and Obtain Approval for Exception to Design Standards
150.25.15	Prepare and Approve Access Modification Request
150.25.20	Circulate, Review & Approve PID

160	Perform Preliminary Engineering Studies and Prepare Draft Project Report
160.05	Review Project Information
160.05.05	Review Approved PID
160.05.10	Review Geotechnical Information
160.05.15	Review Materials Information
160.05.20	Review Traffic Data and Forecasts
160.05.25	Review Geometrics
160.05.30	Review Project Scope
160.05.35	Review Project Cost Estimate
160.10	Perform Engineering Studies
160.10.05	Perform Surveys and Mapping for Project Report
160.10.10	Prepare Traffic Forecasts/Modeling
160.10.15	Prepare Geometric Plans for Project Alternatives
160.10.20	Perform Value Analysis
160.10.25	Perform Hydraulics / Hydrology Studies
160.10.30	Develop Highway Planting Design Concepts
160.10.35	Perform Traffic Operational Analysis
160.10.40	Review and Update Right of Way Data Sheet
160.10.45	Re-assess Utility Impacts
160.10.50	Perform Railroad Study
160.10.55	Perform Multi-modal Study
160.10.60	Perform Park & Ride Study
160.10.65	Perform Relinquishment and Vacation Study
160.10.70	Perform Traffic Studies
160.10.75	Prepare / Update Materials Information for Project Report
160.10.80	Prepare / Update Geotechnical Information
160.10.85	Prepare Structures Advanced Planning Studies for New Alternatives
160.10.90	Prepare HOV Report
160.15	Prepare Draft Project Report
160.15.05	Prepare Cost Estimates for Alternatives
160.15.10	Prepare Fact Sheet for Exceptions to Design Standards
160.15.15	Obtain Approval of Exceptions to Encroachment Policy
160.15.20	Prepare Draft Project Report
160.15.25	Circulate, Review, & Approve Draft Project Report

165	Perform Environmental Studies and Prepare Draft Environmental Document (DED)
165.05	Perform Environmental Scoping and Select Alternatives for Study
165.05.05	Review Project Information
165.05.10	Perform Public and Agency Scoping Process
165.05.15	Select Alternatives for Further Study
165.05.20	Prepare Maps for Environmental Evaluation
165.10	Perform General Environmental Studies
165.10.05	Perform Surveys and Mapping for Environmental Studies
165.10.10	Obtain Rights of Entry for Environmental Studies
165.10.15	Perform Socioeconomic, Land Use, and Growth Studies
165.10.20	Perform Visual Impact Analysis
165.10.25	Perform Noise Study
165.10.30	Perform Air Quality Study
165.10.35	Perform Water Quality Studies
165.10.40	Perform Energy Studies
165.10.45	Prepare Summary of Geotechnical Report
165.10.50	Perform Preliminary Site Investigation for Hazardous Waste
165.10.55	Prepare Draft Right of Way Relocation Impact Document
165.10.60	Prepare Location Hydraulic/Floodplain Study Report
165.10.65	Perform Paleontology Study
165.15	Perform Biological Studies
165.15.05	Perform Biological Assessment
165.15.10	Perform Wetlands Study
165.15.15	Perform Resource Agency Permit Related Coordination
165.15.20	Prepare Natural Environment Study Report
165.20	Perform Cultural Resource Studies
165.20.05	Prepare Areas of Potential Effect (APE) Map
165.20.10	Perform Phase I Archaeology Study
165.20.15	Prepare Historical Study Report (Combined HSR, HRER, and HASR)
165.20.20	Perform Extended Phase I Archaeology Study (XPI)
165.20.25	Perform Phase II Archaeology Study
165.20.45	Prepare Historic Property Survey Report (HPSR) / Determination of Eligibility
165.20.50	Prepare Finding of Effect
165.20.55	Perform PRC 5024 Consultation
165.25	Prepare and Approve Draft Environmental Document
165.25.05	Prepare Draft Environmental Document
165.25.10	Prepare Section 4(f) Evaluation
165.25.15	Prepare Categorical Exemption / Categorical Exclusion Determination
165.25.20	Conduct Environmental PEER & Other Reviews
165.25.25	Obtain Approval to Circulate

175 Circulate Draft Environmental Document and Select Preferred Project Alternative

- 175.05 Circulate DED
- 175.05.05 Prepare Master Distribution and Invitation Lists
- 175.05.10 Prepare Notices Regarding Public Hearing & Availability of DED
- 175.05.15 Publish and Circulate DED
- 175.05.20 Obtain Federal Consistency Determination (Coastal Zone)
- 175.10 Prepare for and Hold Public Hearing
- 175.10.05 Determine Need for Public Hearing Process
- 175.10.10 Arrange for Public Hearing Logistics
- 175.10.15 Prepare Displays for Public Hearing
- 175.10.20 Prepare and Publish Notices of Public Hearing and Availability of DED
- 175.10.25 Conduct Meeting to Review Map Displays and Discuss Public Hearing
- 175.10.30 Display Public Hearing Maps
- 175.10.35 Hold Public Hearing
- 175.10.40 Prepare and Distribute Record of Public Hearing
- 175.15 Respond to Public Comments and Correspondence
- 175.20 Select Preferred Alternative

180 Prepare and Approve Project Report and Final Environmental Document

- 180.05 Prepare and Approve Project Report
- 180.05.05 Update Draft Project Report
- 180.05.10 Review and Approve Project Report
- 180.10 Prepare and Approve Final Environmental Document (FED)
- 180.10.05 Prepare and Approve FED
- 180.10.10 Public Distribution of FED
- 180.10.15 Prepare Final Right of Way Relocation Impact Document
- 180.15 Close Out Environmental Process
- 180.15.05 Prepare and Approve Record of Decision (NEPA)
- 180.15.10 Prepare and File Notice of Determination (CEQA)

185	Prepare Base Maps and Plan Sheets
185.05	Review and Update Project Information
185.05.05	Review Project Concept
185.05.10	Update Project Information
185.10	Perform Design Surveys and Photogrammetric Mapping
185.10.05	Perform Project Control Surveys
185.10.10	Prepare Photogrammetric Map Products
185.10.15	Perform Design Data Surveys
185.15	Perform Preliminary Design
185.15.05	Perform Roadway and Misc. Design
185.15.10	Review Proposed Geometrics
185.15.15	Prepare Request for Exceptions to Design Standards
185.15.20	Perform Value Analysis
185.20	Prepare Engineering Reports
185.20.05	Update Traffic Data, Analysis, and Forecasts
185.20.10	Prepare Hydrology and Hydraulic Reports
185.20.15	Prepare Geotechnical Design Report
185.20.20	Prepare Pavement Design Report
185.20.25	Prepare Materials Report
185.20.30	Prepare Soundwall Design Report
185.25	Determine Right of Way Requirements
185.25.05	Review Project with Affected Agencies
185.25.10	Determine Fee and Easement Requirements
185.25.15	Prepare Right of Way Requirements Maps
185.25.20	Determine Final Railroad Involvement
185.25.25	Determine Water Well Abandonment Needs

190 Prepare Structure Site Plans

- 190.10 Prepare Site Plans for Retaining Walls and Non-standard Earth Retention Systems
- 190.15 Prepare Site Plans for Soundwalls on Retaining Systems or Structures
- 190.20 Prepare Site Plans for Pumping Plants
- 190.25 Prepare Site Plans for Special-Design Culverts
- 190.30 Prepare Site Plans for Bridges and Structures

200 Coordinate Utilities

- 200.05 Perform Preliminary Utility Verification
- 200.10 Determine Utility Locations and Prepare Conflict Maps
 - 200.10.05 Prepare Notices and Obtain Agreements for Potholing
 - 200.10.10 Perform Potholing
 - 200.10.15 Perform Utility Surveys
 - 200.10.20 Review for Conflicts after Utility Surveys
 - 200.10.25 Prepare Utility Conflict Maps
- 200.15 Utility Conflict Resolution
- 200.20 Prepare Utility Relocation Plan
 - 200.20.05 Prepare Liability/FHWA Authorization Package
 - 200.20.10 Review & Approve Liability/ FHWA Authorization Package
 - 200.20.15 Transmit Notice/Agreement/Permit to Utility Owner
 - 200.20.20 Prepare Utility Clearance Letter for R/W Certification

205	Obtain Permits, Agreements, and Route Adoptions
205.05	Determine Required Permits
205.10	Obtain Permits
205.10.05	Obtain U.S. Corps of Engineers Permit (404)
205.10.10	Obtain U.S. Forest Service Permit
205.10.15	Obtain U.S. Coast Guard Permit
205.10.20	Obtain Department of Fish & Game Permit (1601/1603)
205.10.25	Obtain Coastal Development Permit
205.10.30	Obtain Local Agency Concurrence/Permit
205.10.40	Obtain Waste Discharge Permit (NPDES)
205.10.45	Obtain U.S. Fish and Wildlife Service Approval
205.10.50	Obtain Regional Water Quality Control Board Permit (401)
205.10.95	Obtain "Other" Permits
205.15	Obtain Railroad Agreements
205.15.05	Obtain Plan Approval
205.15.10	Prepare Special Provisions and Insurance Clauses
205.15.15	Prepare Service Contract for Railroad Services
205.15.20	Negotiate and Obtain Construction and Maintenance Agreements
205.15.25	Prepare PUC Exhibits and Application
205.20	Obtain Freeway Agreements
205.20.05	Prepare Draft Freeway Agreement
205.20.10	Review Draft Freeway Agreement
205.20.15	Prepare Final Freeway Agreement
205.20.20	Execute Freeway Agreement
205.25	Prepare Agreement for Materials Sites
205.30	Prepare and Execute Maintenance Agreement
205.35	Prepare and Execute Cooperative Agreement
205.35.05	Prepare and Execute Cooperative Agreement for Environmental Process
205.35.10	Prepare and Execute Cooperative Agreement for Design
205.35.15	Prepare and Execute Cooperative Agreement for Construction
205.35.20	Prepare and Execute Cooperative Agreement for R/W
205.40	Obtain Route Adoptions
205.40.05	Prepare Route Adoption Map
205.40.10	Prepare New Connection Request & Route Adoption for Submittal to CTC
205.40.15	Place Route Adoption and Public Road Connections on CTC Agenda
205.45	Obtain MOU from Tribal Employment Rights Office (TERO)
205.50	Prepare and Execute Cooperative Agreement for Relinquishment

210 Prepare Preliminary Structures Design Data

210.01 Prepare Preliminary Structures Design Data for Structure 1

210.01.05 Review District Submittal

210.01.10 Perform Structures Site Investigation

210.01.15 Prepare Preliminary Structure Report

210.01.20 Prepare Draft Foundation Plan

210.01.25 Prepare Preliminary Structures Foundation Report

210.01.30 Prepare Hydrology Report

210.02 Prepare Preliminary Structures Design Data for Structure 2

210.02.05 Review District Submittal

210.02.10 Perform Structures Site Investigation

210.02.15 Prepare Preliminary Structure Report

210.02.20 Prepare Draft Foundation Plan

210.02.25 Prepare Preliminary Structures Foundation Report

210.02.30 Prepare Hydrology Report

|
|
|210.89 Prepare Preliminary Structures Design Data for Structure 89
(Same text and activities as other structures above)210.95 Prepare Preliminary Structures Design Data for “Other” Structures
(Same text and activities as other structures above)**215 Prepare Structures General Plans**

215.01 Prepare Structure General Plans for Structure 1

215.01.05 Develop Preliminary Design

215.01.10 Prepare Preliminary Plans Sheets

215.01.15 Develop Preliminary Quantities

215.01.20 Perform Foundation Field Investigation

215.01.25 Prepare Foundation Report and Log of Test Borings

215.02 Prepare Structure General Plans for Structure 2

215.02.05 Develop Preliminary Design

215.02.10 Prepare Preliminary Plans Sheets

215.02.15 Develop Preliminary Quantities

215.02.20 Perform Foundation Field Investigation

215.02.25 Prepare Foundation Report and Log of Test Borings

|
|
|215.89 Prepare Structure General Plans for Structure 89
(Same text and activities as for structures above)

215.90 Prepare Structure General Plans for “Overall” Project

215.90.05 Develop Preliminary Estimates

215.90.10 Approve Preliminary Plans (Type Selection/Strategy Mtg.)

215.95	Prepare Structure General Plans for “Other” Structures
215.95.05	Develop Preliminary Design
215.95.10	Prepare Preliminary Plan Sheets
215.95.15	Develop Preliminary Quantities
215.95.20	Perform Foundation Field Investigation
215.95.25	Prepare Foundation Report and Log of Test Borings

220	Perform Right Of Way Engineering
220.05	Retrace and Perpetuate Existing Land Net
220.05.05	Perform Record Data Search
220.05.10	Perform Land Net Recovery and Field Ties
220.05.15	Reduce and Adjust Field Tie Data
220.05.20	Perform Pre-construction Monument Perpetuation Surveys
220.05.25	Prepare and File Perpetuation Documents
220.10	Prepare Land Net Map
220.10.05	Analyze Adjusted Field Tie Data
220.10.10	Reconcile Record and Field Tie Data
220.10.15	Plot Final Position of Land Net
220.10.20	Prepare and File Record of Survey Retracement Map
220.15	Prepare Right of Way Maps
220.15.05	Prepare Appraisal Map
220.15.10	Prepare and File Record of Survey
220.15.15	Prepare State or Federal Application Map
220.15.20	Prepare Federal Participation Map
220.15.25	Prepare Resolution of Necessity Map
220.15.30	Prepare Comparable Sales Map
220.15.35	Prepare Hardship or Protection Map
220.15.95	Prepare "Other" Maps
220.20	Prepare Acquisition Document
220.20.05	Prepare Legal Description
220.20.10	Prepare Deeds and Ancillary Conveyance Documents
220.20.15	Prepare Resolution of Necessity
220.25	Prepare Deeds Package to Fulfill Contract Obligations
220.25.05	Prepare Director's Deeds
220.25.10	Prepare Director's Deed Plats
220.25.15	Prepare Utility Legal Description and Plat
220.25.95	Prepare "Other" Deeds
220.30	Perform Right of Way Revisions
220.30.05	Perform Revision Initiated by Others
220.30.10	Perform Revision Initiated by Right of Way
220.35	Prepare Right of Way Record Map
220.35.05	Review Temporary Record Map
220.35.10	Delineate Excess Land Parcels
220.35.15	Verify & Post Conveyance Docs
220.35.20	Update Status of Excess Lands Disposition

225	Certify Right Of Way
225.05	Appraise Right of Way
225.05.05	Prepare Hardship and Protection Appraisal
225.05.10	Prepare Regular Appraisal
225.05.15	Review or Revise Contract Appraisal Work
225.05.20	Prepare Miscellaneous Appraisals
225.05.25	Prepare Goodwill Appraisals
225.05.30	Prepare Appraisal Revision
225.05.35	R/W Appraisal Staking Survey
225.10	Acquire Right of Way
225.10.05	Acquire Hardship and Protection Parcels
225.10.10	Obtain Real Property Interests by R/W Contract
225.10.15	Perform Revised / Miscellaneous Acquisition
225.10.20	Obtain Resolution of Necessity and Order for Possession
225.10.25	R/W Acquisition Staking Survey
225.15	Relocate Occupants / Personalty and Clear Right of Way
225.15.05	Provide Relocation Services and Payments
225.15.10	Prepare Replacement Housing Valuations
225.15.15	Sell Improvements
225.15.20	Demolish Improvements
225.20	Prepare R/W Certification Documents
225.25	Process Federal-Aid Documents

230 Prepare Draft PS&E

- 230.05 Prepare Draft Roadway Plans
 - 230.05.05 Prepare Title Sheet
 - 230.05.10 Prepare Typical Cross Sections
 - 230.05.15 Prepare Key Map and Line Index
 - 230.05.20 Prepare Roadway Layouts
 - 230.05.25 Prepare Profile and Superelevation Sheets
 - 230.05.30 Prepare Construction Details
 - 230.05.35 Prepare Contour Grading Plans
 - 230.05.40 Prepare Summary of Quantities Sheets
 - 230.05.45 Prepare Noise Barrier Plans
 - 230.05.50 Prepare Retaining Wall Plans
 - 230.05.55 Select Standard Plans
 - 230.05.60 Prepare Stage Construction and Detour Plans or Traffic Handling Plans
- 230.10 Prepare Draft Highway Planting Plans
 - 230.10.05 Prepare Highway Planting Plans
 - 230.10.15 Prepare Plant List
 - 230.10.20 Prepare Irrigation Plans
 - 230.10.30 Prepare Irrigation Quantity Sheets
- 230.15 Prepare Draft Traffic Plans
 - 230.15.05 Prepare Signing and Pavement Delineation Plans
 - 230.15.10 Prepare Construction Area Signs Plans
 - 230.15.15 Prepare Traffic Electrical Plans
- 230.20 Prepare Traffic Management Plan
- 230.25 Prepare Draft Utility Plans
 - 230.25.05 Prepare “New Facility” Plans
 - 230.25.10 Prepare Utility Relocation Plans
- 230.30 Prepare Draft Drainage Plans
- 230.35 Prepare Draft Specifications
 - 230.35.05 Develop Roadway Specifications
 - 230.35.10 Develop Highway Planting Specifications
 - 230.35.15 Develop Traffic Specifications
 - 230.35.20 Develop Electrical Specifications
 - 230.35.25 Develop Utility Specifications
 - 230.35.30 Develop Hydraulic Specifications
- 230.40 Prepare Draft PS&E Quantities and Estimates
 - 230.40.05 Calculate Roadway Quantities and Estimate
 - 230.40.10 Calculate Highway Planting Quantities and Estimate
 - 230.40.15 Calculate Drainage Quantities and Estimate
 - 230.40.20 Calculate Traffic Quantities and Estimate
 - 230.40.25 Calculate Electrical Quantities and Estimate
 - 230.40.30 Calculate Utility Quantities and Estimate
- 230.55 Incorporate Structures Draft PS&E

235 Mitigate Environmental Impacts and Clean Up Hazardous Waste

- 235.05 Perform Environmental Mitigation
 - 235.05.05 Perform Historical Structures Mitigation
 - 235.05.10 Perform Archaeological and Cultural Mitigation
 - 235.05.15 Perform Biological Mitigation
 - 235.05.20 Perform Environmental Mitigation R/W Work
 - 235.05.25 Perform Paleontology Mitigation
- 235.10 Perform Detailed Site Investigation for Hazardous Waste
 - 235.10.05 Obtain Right or Permit for Hazardous Waste Site Investigations
 - 235.10.10 Perform Surveys to Locate Hazardous Waste Sites
 - 235.10.15 Conduct Detailed Investigation
- 235.15 Develop Hazardous Waste Management Plan
- 235.20 Prepare Hazardous Waste PS&E
- 235.25 Perform Hazardous Waste Clean-up
- 235.30 Certify Freedom of Hazardous Waste

240 Prepare Draft Structures PS&E

- 240.01 Prepare Draft Structure PS&E for Structure 1
 - 240.01.05 Perform Design
 - 240.01.10 Prepare Plan Sheets
 - 240.01.15 Check Design and Plan Sheets
 - 240.01.20 Prepare Quantities
- 240.02 Prepare Draft Structure PS&E for Structure 2
 - 240.02.05 Perform Design
 - 240.02.10 Prepare Plan Sheets
 - 240.02.15 Check Design and Plan Sheets
 - 240.02.20 Prepare Quantities
- 240.89 Prepare Draft Structure PS&E for Structure 89
(Same as for other structures)
- 240.90 Prepare Draft Structures PS&E for “Overall” Project
 - 240.90.05 Distribute and Review Unchecked Plans
 - 240.90.10 Distribute and Review Checked Plan Sheets
 - 240.90.15 Perform Foundation Review
 - 240.90.20 Prepare Draft Specifications
 - 240.90.25 Prepare Estimate
 - 240.90.30 Review Draft Plans, Specifications, and Estimate
- 240.95 Prepare Draft Structures PS&E for “Other” Structures
 - 240.95.05 Perform Design
 - 240.95.10 Prepare Plan Sheets
 - 240.95.15 Check Design and Plan Sheets

240.95.20 Prepare Quantities

250 Prepare Final Structures PS&E Package

- 250.05 Incorporate District Comments into Structures PS&E
- 250.10 Finalize Structures PS&E Package

255 Circulate, Review, and Prepare Final District PS&E Package

- 255.05 Circulate & Review Draft District PS&E Package
- 255.10 Update PS&E Package
 - 255.10.05 Update Roadway PS&E
 - 255.10.10 Update Highway Planting PS&E
 - 255.10.15 Update Traffic PS&E
 - 255.10.20 Update Hydraulics PS&E
 - 255.10.25 Update Technical Reports
 - 255.10.30 Update Utility PS&E
 - 255.10.35 Update Electrical PS&E
- 255.15 Perform Environmental Reevaluation
- 255.20 Prepare Final District PS&E Package
 - 255.20.05 Review Plans for Drafting Standards Compliance
 - 255.20.10 Incorporate Final Structures Specifications and Estimate into Final District PS&E
 - 255.20.15 Prepare Request for Funds
- 255.25 Prepare Geotechnical Information Handout
- 255.30 Prepare Materials Information Handout

260 Prepare Contract Documents

- 260.10 Produce Check Prints
- 260.15 Prepare Draft Contract Documents
 - 260.15.05 Verify PS&E is Complete and Conforms to Department Policies and Standards
 - 260.15.10 Incorporate District Revisions
- 260.20 Prepare Project for Advertising
 - 260.20.05 Final Plan Preparation
 - 260.20.10 Update Contract Documents
 - 260.20.15 Develop MBE/WBE/DVBE/DBE Match List and Set Goals
 - 260.20.20 Perform Fund Analysis and Finalize BEES
 - 260.20.25 Prepare Final Specifications and Proposal and Contract Documents
 - 260.20.30 Reproduce Contract Documents
 - 260.20.35 Delineate Plans

265 Advertise, Open Bids, Award, and Approve Contract

- 265.10 Advertise Project
 - 265.10.05 Schedule Project for Advertising
 - 265.10.10 Advertise Project - State Contracts Register
 - 265.10.15 Advertise Project - Newspapers
- 265.15 Distribute Bid Documents
- 265.20 Develop and Issue Addenda
- 265.25 Respond to Inquiries & Open Bids
- 265.30 Award Contract
 - 265.30.05 Evaluate MBE/WBE/DVBE/DBE Goal, Good Faith Effort, and Hearings
 - 265.30.10 Resolve Bid Award Issues and Hearings
 - 265.30.15 Prepare, Process, and Award Contract
- 265.35 Execute and Approve Contract

270 Perform Construction Engineering and General Contract Administration

- 270.05 Prepare Resident Engineer's File
- 270.10 Prepare Staking Notes
- 270.15 Perform Construction Staking
 - 270.15.05 Perform Initial Staking
 - 270.15.10 Perform Re-staking
- 270.20 Perform Construction Engineering Work
 - 270.20.05 Review Resident Engineer's File
 - 270.20.10 Review Project Plans, Special Provisions, and Estimate
 - 270.20.15 Determine Contract Pay Quantities
 - 270.20.20 Determine Lines and Grades Control
 - 270.20.25 Review Contractors' Falsework Submittals
 - 270.20.30 Review Contractors' Trenching and Shoring Submittals
 - 270.20.35 Review Shop Plans
 - 270.20.40 Review Cost Reduction Incentive Proposals (CRIPS)
 - 270.20.45 Review Contractors' Water Pollution Control Program
 - 270.20.50 Provide Technical Support
- 270.25 Perform Construction Contract Administration Work
 - 270.25.05 Secure Lease for Resident Engineer Office Space or Trailer
 - 270.25.10 Set Up Construction Project Files
 - 270.25.15 Conduct Pre-construction Meeting
 - 270.25.20 Prepare Progress Pay Estimates
 - 270.25.25 Prepare Weekly Statement of Working Days
 - 270.25.30 Maintain Construction Project Files and General Field Office Clerical Work
 - 270.25.35 Perform Labor Compliance Activities
 - 270.25.40 Approve Subcontractor Substitutions
 - 270.25.45 Coordination
- 270.30 Inspect Contract Item Work
 - 270.30.05 Photograph Jobsite and Contractors' Operations

- 270.30.10 Inspect Contractor's Work for Compliance
- 270.30.15 Review and Document Contractors' Operations Relative to Safety Requirements
- 270.30.20 Prepare Daily Diary of Contract Operations
- 270.30.25 Prepare Punch List
- 270.35 Sample & Test Construction Material
- 270.35.05 Sample and Test Materials for Quality Assurance
- 270.35.10 Perform Plant Inspection for Quality Assurance
- 270.35.15 Perform Independent Assurance Sampling and Testing
- 270.35.20 Perform Source Inspection
- 270.40 Perform Safety and Maintenance Reviews
- 270.45 Process Relief from Maintenance
- 270.50 Prepare Certificate of Compliance with Environmental Mitigation Requirements
- 270.55 Perform Final Inspection and Recommend Acceptance

285 Prepare and Administer Contract Change Orders

- 285.05 Prepare and Process Contract Change Order (CCO)
- 285.05.05 Determine Need for CCO
- 285.05.10 Design and Prepare Draft CCO
- 285.05.15 Process CCO for Approval
- 285.05.20 Process Payments for CCO Work
- 285.10 Provide Functional Support
- 285.10.05 Perform Field Surveys for CCO
- 285.10.95 Provide "Other" Functional Support

290 Resolve Contract Claims

- 290.05 Review and Analyze Notices of Potential Claims
- 290.10 Prepare Supporting Documentation and Respond to Notices of Potential Claims
- 290.15 Prepare, Review, and Approve Claim Report
- 290.20 Conduct District Claim Meeting or Board of Review
- 290.25 Prepare for and Participate in Arbitration Hearing
- 290.30 Negotiate Claim Settlement
- 290.35 Provide Technical Support

295 Accept Contract, Prepare Final Construction Estimate, and Prepare Final Report

- 295.05 Process Estimate After Acceptance
- 295.10 Prepare Proposed Final Contract Estimate
- 295.15 Prepare As-Built Plans
- 295.20 Prepare Project History File
- 295.25 Prepare Final Report
- 295.30 Process Final Estimate

300 Perform Final Right Of Way Activities

- 300.05 Monument the Right of Way and Prepare Monumentation Maps
- 300.05.05 Perform Right of Way Monumentation Survey
- 300.05.10 Prepare and File Monumentation Maps
- 300.10 Perform Continuing Condemnation Activities
- 300.10.05 Prepare Trial Exhibits
- 300.10.10 Confer with Attorneys
- 300.10.15 Review/Prepare Condemnation Appraisal
- 300.10.20 Appear as Expert Witness
- 300.15 Perform Utility Relocation
- 300.15.05 Coordinate Relocation With Utility Owner
- 300.15.10 Administer / Inspect Relocation Work
- 300.20 Perform Close Out
- 300.20.05 Process Billings per Utility Agreement
- 300.20.10 Prepare Director's Deed / JUA / CCUA
- 300.20.15 Perform Final Audit
- 300.20.20 Amend Utility Agreement
- 300.20.25 Review Completed Maps and Plans
- 300.20.30 Perform Final Vouchering
- 300.25 Prepare Relinquishment and Vacation Maps

Appendix E

Glossary

term	definition
Activity	A discrete unit of work that produces some product or decision. In XPM use, it denotes the lowest level in the Work Breakdown.
Capital Outlay Support	A somewhat loose term that implies the roadway projects that are funded by State and Federal moneys, program-coded in TRAMS as 20.10, 20.20, 20.30 and some 20.40.
Charge district	The charge district is the organizational entity that manages the work and receives the benefit of the work.
EA	The Expenditure Authorization is a specific, tabled record maintained in TRAMS that identifies and authorizes a particular kind of budgeted work or expenditure. All EA's are coded to reflect needed budgetary or financing information and other statutory requirements.
ESC	Engineering Service Center is the organization to provide structure engineering and design.
OBS	The Organizational Breakdown Structure is a hierarchical description of the Department's organizational chart which identifies the responsible person for a given resource as defined in the RBS.
PMCS	Project Management and Control System - a computer system to record and report on project information, schedules, locations, budget allocations, and dates.
Pseudo activities	In certain cases, it is helpful to allow addition of an activity to represent a small grouping of activities when reporting to each one might be onerous. See page 9 of this manual for examples.
RBS	The Resource Breakdown Structure is a hierarchical breakdown of total resources which defines assignable resources such as personnel, equipment, facilities, or consumable materials.
Single Focal Point	A person in each district designated to answer questions or raise issues on project management of the Capital Outlay Support roadway projects.

term	definition
Task	A discrete unit of work or summary of activities that, when completed, produce some product or decision. In XPM use, it denotes a unit of work that has lower level breakdown. It is a summary. Since an activity can become a summary task by adding lower level activities, these terms are relative to the discussion and may be used interchangeably in most circumstances.
Template	An outline or master plan of tasks and activities that can be modified for a specific project. The template can contain the usual set of activities for some type of project or it can contain all possible activities.
TRAMS	TRansportation Accounting and Management System - a computer system for recording and reporting on expenditures of Caltrans
TRS	Time Reporting System at Caltrans. The computer system that most employees use to record the hours they have worked on each project.
WBS	The Work Breakdown Structure is a product-oriented hierarchy that organizes and defines the total scope of Caltrans Capital Outlay Support work. This structure defines the work activities, not the staff or other resources who will complete the work.
XPM	Abbreviation for the software package eXpert Project Management which was selected for statewide management of Capital Outlay Support roadway projects.